

AD_____

COOPERATIVE AGREEMENT DAMD17-96-2-6022

TITLE: The Nature and Outcomes for Women of Stressors Associated with Military Life

PRINCIPAL INVESTIGATOR: Kathleen Jordan, Ph.D.

CONTRACTING ORGANIZATION: Research Triangle Institute
Research Triangle Park , North Carolina 27709-2194

REPORT DATE: November 1999

TYPE OF REPORT: Annual

PREPARED FOR: Commander
U.S. Army Medical Research and Materiel Command
Fort Detrick, Frederick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for public release;
distribution unlimited

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.

20000324 059

DTIC QUALITY INSPECTED 3

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE November 1999	3. REPORT TYPE AND DATES COVERED Annual (1 Nov 98 - 31 Oct 99)	
4. TITLE AND SUBTITLE The Nature and Outcomes for Women of Stressors Associated with Military Life			5. FUNDING NUMBERS DAMD17-96-2-6022	
6. AUTHOR(S) Kathleen Jordan, Ph.D.				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Research Triangle Institute Research Triangle Park, North Carolina 27709-2194			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Commander U.S. Army Medical Research and Materiel Command Fort Detrick, Frederick, Maryland 21702-5012			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution unlimited			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) The study of <i>The Nature and Outcomes for Women of Stressors Associated with Military Life</i> will obtain data that will enable us to assess the distribution of stress exposure across women in the major occupational specialties and different deployment statuses that women hold in the Army and Reserve today. Principal study objectives are to: <ul style="list-style-type: none"> (a) identify the most important stressors and their outcomes among women in the Army Reserve and active duty component; (b) describe the relationship between stressors and risk factors, including mediating factors such as socio-demographics and buffering agents; and, (c) make recommendations about prevention strategies that might be employed to reduce stressors and their impact. The proposed study will provide data never available before—data that Army decisionmakers and planners can use to develop mechanisms, such as prevention and intervention programs, to reduce stressors and their impact on Army women. This annual report discussed major activities for Year 2, including pre-testing, final survey development, survey administration, and data collection planning. In addition, it includes activities planned for Year 3.				
14. SUBJECT TERMS Defense Women's Health Research Program; Stress; Stressors; Military; Outcomes; Posttraumatic stress disorder (PTSD)			15. NUMBER OF PAGES 141	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT Unlimited	

FOREWORD

Opinions, interpretations, conclusions and recommendations are those of the author and are not necessarily endorsed by the U.S. Army.

_____ Where copyrighted material is quoted, permission has been obtained to use such material.

_____ Where material from documents designated for limited distribution is quoted, permission has been obtained to use the material.

_____ Citations of commercial organizations and trade names in this report do not constitute an official Department of Army endorsement or approval of the products or services of these organizations.

_____ In conducting research using animals, the investigator(s) adhered to the "Guide for the Care and Use of Laboratory Animals," prepared by the Committee on Care and Use of Laboratory Animals of the Institute of Laboratory Resources, National Research Council (NIH Publication No. 86-23, Revised 1985).

 X For the protection of human subjects, the investigator(s) adhered to policies of applicable Federal Law 45 CFR 46.

_____ In conducting research utilizing recombinant DNA technology, the investigator(s) adhered to current guidelines promulgated by the National Institutes of Health.

_____ In the conduct of research utilizing recombinant DNA, the investigator(s) adhered to the NIH Guidelines for Research Involving Recombinant DNA Molecules.

_____ In the conduct of research involving hazardous organisms, the investigator(s) adhered to the CDC-NIH Guide for Biosafety in Microbiological and Biomedical Laboratories.

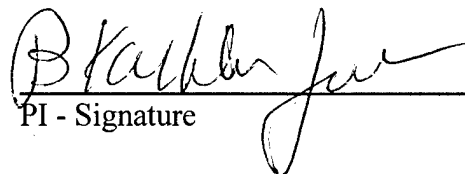
 16029, 1989
PI - Signature Date

Table of Contents

Section	Page
Front Cover	1
Standard Form (SF) 298, Report Documentation Page	2
Foreword	3
Table of Contents	4
 1.0 Introduction	 5
1.1 Information Needed to Better Understand the Nature and Effects of Stressors on Women in the Military	 5
1.2 Hypotheses/Purpose	6
1.3 Technical Objectives	10
1.4 Accomplishments in Year 1	10
1.5 Accomplishments in Year 2	11
 2.0 Year 3 Activities	 11
2.1 Questionnaire Administration to Active Duty Women	12
2.2 Questionnaire Administration to Women Reservists	13
2.3 Cooperation and Access	14
2.4 Data Management	15
2.5 Analysis Planning	15
2.6 Demographic Data	16
2.7 Human Subjects Review	19
2.8 Summary	19
 3.0 Year 4	 19
3.1 Activities Planned for Year 4	19
3.2 Analysis Plan	21
3.3 Problems Anticipated in Year 4	23
 References	 24
 Appendices	 25
A Year 1 Annual Report	26
B Year 2 Annual Report	49
C Walter Reed Army Medical Center Department Of Clinical Investigations Review Document	 66
D Survey Questionnaire	88
E Frequently Asked Questions	110
F Proctor Guide	112
G IRB Approval	124
H Outcome Measures and Study Variables	126

THE NATURE AND OUTCOMES FOR WOMEN OF STRESSORS ASSOCIATED WITH MILITARY LIFE

YEAR 3 ANNUAL REPORT

1.0 Introduction

This study examines (1) what are the stressors that most negatively impact Army women; (2) what factors ameliorate the effects of negative stressors; and, (3) what are the negative outcomes that result from stressors? A full review of the literature in this area may be found in the original proposal or the Year 1 report. In Year 1 we conducted focus groups to expand our knowledge of stressors of Army women and finalized the draft questionnaire. We are currently in the data collection phase of the study.

1.1 Information Needed to Better Understand the Nature and Effects of Stressors on Women in the Military

Much has still to be learned about stressors of women in the military in general and in the Army and the Reserve specifically. Although stressors of military women have been found to be similar to the stressors of other women, and although negative outcomes related to stress appear to be similar for both populations, the information currently available is insufficient to develop effective intervention and prevention programs.

First, we need data on stressors and outcomes on a broader sample of women in the Army and Reserve. Previous studies have been focused particularly on nurses and small groups of other women such as military police units. However, these data do not represent the wide variety of occupations of the Reserve and Army Active duty women. We particularly need more information on the Army Reserve. We have found no studies to date on stressors of these women.

Second, we need more detailed information on the stressors themselves—it is insufficient to say that “working in a predominately male environment” is a stressor. What are the specific factors that make these roles stressful and why are they less stressful in some units than in others?

Third, we need more information about the relative importance of different types of stressors and how stressors relate to socio-demographic characteristics, occupation, etc. Prevention and intervention programs can then be targeted for particular groups of women. For

example, the most serious stressors for unmarried junior enlisted personnel may be different than those for older married women officers. The most important stressors of nurses are likely to be different from the most important stressors of combat support personnel.

Fourth, and similarly, we need to better understand those factors that mediate stressors. For example, how does social support influence whether a particular type of stressor impacts negatively one woman and not another with similar demographic characteristics? What organizational structures and programs might be changed or developed to help women in the Army and Reserve access and use buffers such as social support more effectively?

The proposed study will address these issues. We propose to examine:

1. What are some of the most important stressors of women in the Army and Army Reserve and what is relative importance of the various stressors? We need information about war zone and non-war zone stressors, both acute and chronic stressors, and stressors of women in the myriad roles they now occupy in the Army.
2. What are the negative outcomes that are the result of stress and how is exposure related to outcome? We need information on the relationship between stressors and diverse serious outcomes: health consequences, mental health consequences, substance abuse and dependence, and job performance and retention.
3. How do mediating variables impact the relationship between stressors and outcomes? For example, how do socio-demographic characteristics, such as age and rank, mediate the effects of stressor exposure on outcome? What potential buffers—such as support from supervisor—are most effective at reducing negative outcomes?
4. What characteristics of the unit are associated with negative outcomes?

The proposed study will provide data never available before—data that Army decision makers and planners can use to develop mechanisms, such as prevention and intervention programs, to reduce stressors and their impact on Army women.

1.2 Hypotheses/Purpose

Our purpose is to:

- identify the most important stressors and their outcomes among women in the Army and Army Reserve;

- describe the relationship between stressors and risk factors, including mediating factors such as socio-demographics and buffering agents; and,
- make recommendations about prevention strategies that might be employed to reduce stressors and their impact.

Our general hypotheses are that:

- exposure to stressors is associated with poorer outcomes, including subsequent health and mental health status, substance abuse, and occupational functioning;
- some exposures (e.g., exposure to enemy fire) are more pathogenic than others (e.g., exposure to extreme living conditions); and,
- socio-demographic and other characteristics mediate the effect of stressors on outcomes.

Our specific hypotheses for the study are based on findings from the literature to date.

These include:

- Women in occupations that present more physical danger and more serious daily hassles, such as combat support and military police, will report more stress and have more negative outcomes than women in other occupations.
- Women in units likely to be deployed first will report more stress but will have significantly higher negative outcomes only if deployment has occurred recently or is likely to occur soon.
- Women with children in the home will report more stress than women with no children; single mothers will report more stress than married mothers; women with younger children will report more stress than women with older children.
- Women in units that are predominately male (e.g., 80% or more) will report more stress and have more negative outcomes than other women.
- Women in their first year of enlistment will report more stress than other women. Older women will report more stress than younger women other than first term women. Both first term and older women will have more negative outcomes than other women.
- Women with less education will report more stress and have more negative outcomes than more educated women.

- Women who have served in a war zone or similar hostile situation where they were subject to threats to their lives will have more negative outcomes than other women, controlling on age and education.
- The greatest sources of stress will be: being a parent of young children; being in a predominately male unit; being in a unit where the males have a strong negative attitude toward women serving in their unit; and age.
- Mediating variables will include, but not be limited to, socio-demographics (age, education), support of supervisor, support of male colleagues, and finding the job rewarding.
- Negative outcomes associated with stressors will include more use of health services, more sick time, more reported health problems, more psychological distress, more use of alcohol, and less commitment to staying in the military. In general, other performance measures are not expected to be significantly related to stress.

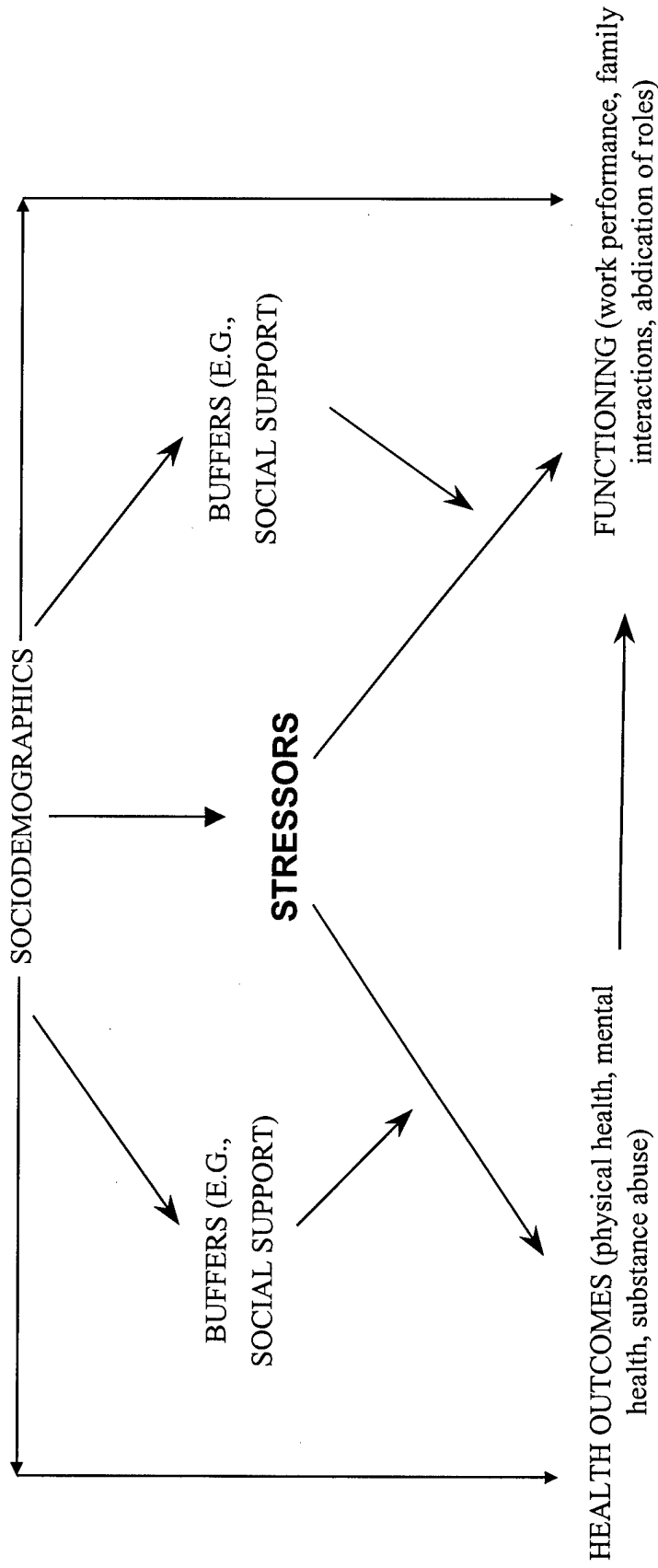
We will examine these hypotheses in a multivariate framework, so that we can assess the long-term, independent effects of a variety of military stressors while controlling for potentially predisposing characteristics of the individual.

The conceptualization that will guide our analyses is the model in Exhibit 1.1. This is consistent with Lazarus and Folkman (1984) and their colleagues who have advanced the position that the patterns of adjustment after stress exposure differ because they are influenced by the variance in characteristics of both stressors and the affected individual.

The data from this study will enable us to assess the distribution of stress exposure across women in the major occupational specialties and different deployment statuses that women hold in the Army and Reserve today. Although descriptive, this information is critical for thinking about potential preventive efforts. Within the scope of this study we will not be able to collect data on a representative sample of women in the Army and Reserve, and therefore cannot provide prevalence estimates of stressors and outcomes of women in these two services. Nonetheless there is much we can contribute to the knowledge about stressors of women in the military.

The final report will include information that will provide data on a broader array of women, stressors, occupations, and outcomes than has ever before been gathered. These data, therefore, will provide a better portrait of the most important stressors of women in these branches of the military, particularly women in the most common occupational specialties. Second, the collected data will allow the examination of the relationship between stressors and outcomes, and to determine what variables mediate these relationships. Thus, the data from this

Exhibit 1.1



Health Outcomes, Functioning = $f(\text{stress})$

Stress = $f(\text{stressors, buffers})$, therefore

Health outcomes, Functioning = $f(\text{stressors, buffers})$

study will enable us to examine the more immediate health, mental health, and performance consequences of the kinds of stress to which women in the Army are routinely exposed.

In our primary data collection, we will attempt to sample units that contain individuals who have served in a war zone or in regions in which soldiers were at risk of being injured or killed by enemy fire, such as Somalia. If we are able to obtain enough such respondents, we can examine models of traumatic stressors on outcomes.

Because of the very limited previous research on stressors of women in the military, at least a portion of the proposed analyses may be best described as “informed exploration.” We believe, however, that an exploratory approach is appropriate given the state of current knowledge about the impact of stressors on women soldiers; we also believe that the risk of spurious findings is reduced by the use of a specific conceptual model to drive the analyses.

1.3 Technical Objectives

Our technical objective is to identify experiences and conditions that are the most stressful to women in the Army and Reserve and that have the most frequent and/or most serious negative outcomes for the women and the Army. This object will be accomplished by:

- conducting focus groups and self-report questionnaires to collect data on major stressors and outcomes from women currently on active duty in the Army (completed in Year 1); and,
- examining newly collected data to determine: (a) the nature, likelihood, and outcomes associated with various types of stressors for women currently in the Army, and (b) the mediating effects of socio-demographic characteristics of the individual, the women’s occupation and family, the environment, and other factors may have on outcomes.

1.4 Accomplishments in Year 1

The accomplishments in Year 1 are fully described in the Year 1 report, which may be found in *Appendix A*. In summary, in Year 1 we:

- finalized the study design, including changing our study groups from the active duty Army and the Army Reserve National Guard (ARNG) to the active duty Army and the Army Reserve;
- spent a lot of time and effort attempting to contact and obtain cooperation from active duty Army and Army Reserve officials in order to obtain permission to use Army active duty and Reserve women as subjects in our study;

- began our efforts to line up sites at which to conduct the data collection;
- conducted focus groups with Army women to supplement the literature on the nature of stressors of Army women;
- developed a draft questionnaire for the full survey; and
- developed the sampling frame for the study.

1.5 Accomplishments in Year 2

The accomplishments in Year 2 are fully described in the Year 2 report, which may be found in *Appendix B*. In summary, in Year 2 we:

- Conducted focus groups with the Army Reservist women and wrote the final focus group report;
- Developed a short questionnaire similar to the focus group protocol for the senior non-commissioned officers and examined the results in conjunction with the focus group findings to inform the development of the survey instrument;
- Developed the final version of the survey questionnaire for both active duty Army and Army Reserves;
- Obtained cooperation and access to units to begin recruitment strategies for survey administrations with Army Reservists only;
- Obtained RTIs Internal Review Board approval for 1999-2000;
- Began survey administrations with Army Reservists and collected data from 419 women; and
- Finalized development of the data management system.

2.0 Year 3 Activities

Several positive accomplishments occurred in Year 3. Of most significance was obtaining access to the Army Active duty and the initiation of administering the survey to Army Active duty women. The most challenging of the activities during Year 3 was the preparation and submission of an extensive document for the review of the Walter Reed Army Medical Center (WRAMC) 'Department of Clinical Investigations (DCIC)' (see *Appendix C*). After investing extensive and labor intensive efforts RTI staff were able to obtain approval for the

administration of surveys to the Active duty women assigned to the WRAMC during Year 4. Accomplishments in Year 3 are explained in detail in the following sections.

2.1 Questionnaire Administration to Active Duty Women

Project staff began recruitment procedures for the Army Active duty early in June 1999. In the first months of FY 1999, we contacted officials at the US Army Medical Command (MEDCOM), US Army Forces Command (FORSCOM), and the Military District of Washington (MDW) to assist us in our coordination with installation commanders to administer questionnaires to active duty women. We were interested in recruiting women who were representative of the national population of women Reservists and Army Active duty in terms of race, rank, and Military Occupational Specialties (MOS). We also wanted a high proportion of women (1) in the most common occupations including medical, communications, supply and administration and, (2) who would be subject to rapid deployment. We obtained data from the US Army Manpower on the distribution of Reservist and Army Active duty women across the United States. These data have assisted us in the identification and recruitment of units with a distribution of MOSs that meet the study criteria for national representativeness. With guidance from our Army consultant, we were able to successfully contact and administer surveys at the installations listed in Exhibits 2.1 and 2.2 included in the sections below.

The survey instrument that was first developed for the Reserve sample was revised to reflect the appropriate situations and terminology for the Army active duty (see Appendix D). Survey administration required that two female project staff travel to each data collection site to proctor the session. As active duty Army women entered the administration room, they were directed to sit only in the chairs that had an information sheet and a pen on the table in front of them. At those sites where space and equipment permitted, chairs were arranged so that there was one empty seat between the women participants to ensure confidentiality.

The proctor guide for survey administration developed during Year 2 was used as a template for all survey administrations. The proctor described the study and what would be asked of respondents, explained the anonymity of the study, and the expected time for survey completion. The proctor then asked for questions, explained that participation was voluntary, and that anyone who chose to was free to leave at any time during survey administration. In all of the completed administrations to-date, only one woman left without completing the questionnaire. Women were also instructed that they should leave after they had completed the questionnaire and drop their questionnaires in a box on the way out. Completion of the survey instrument ranged from 40 to 90 minutes, and overall questionnaire administration averaged one hour.

Exhibit 2.1 shows our progress in Year 3 for numbers of Army Active duty women who have completed the survey questionnaire.

Exhibit 2.1 Progress for Army Active Duty

Active Duty State	Administration Number	Completed Surveys
VA	1	37
DC	2	76
MD	3	81
TX	4	180
KY	5	40
CO	6	66
KS	7	56
GA	8	107
TOTAL		643

2.2 Questionnaire Administration to Women Reservists

We are still in the process of administering the survey to women Reservists, which began in July 1998. The survey administration requirements and protocol are exactly the same for women Reservists as for active duty women. Please refer to section 2.1 for survey administration protocol information. Exhibit 2.2 shows the number of Reservist women who have completed the questionnaire since 1998, the shaded area denotes administrations completed in Year 2. Unshaded boxes reflect administration in Year 3.

Exhibit 2.2 Year 3 Progress for Army Reservists

Reservist State	Administration Number	RSC	Completed Surveys
PA	1	99th	41
PA	2	99th	70
DC	3	99th	120
NY	4	77th	104
AL	5	81st	36
AL	6	87th	48
NC	7	81st	47
NC	8	81st	27
NC	9	81st	27
NC	10	81st	23
DC	11	99th	41
TOTAL			584

* Note: shaded sites completed in Year 2

2.3 Cooperation and Access

One of the major goals for Year 3 was to complete survey administrations and data collection for Army Active duty and Reservist women. We continued to contact reservist commanders and initiated contact with active duty commanders at strategically chosen locations in order to solicit their support for the administration of our questionnaire to women in their units. As documented in the Year 2 report, some senior Army staff continued to have reservations about giving us access to women to complete our survey. Therefore, we postponed recruitment of units in the active duty component until Year 3, when some of the media attention surrounding sexual harassment complaints in the military had subsided.

The Year 2 Annual Report documented difficulties we encountered in obtaining cooperation from military sites to gain access to women soldiers. At that time we did not anticipate serious problems with site recruitment and cooperation for questionnaire administration for Year 3. However, project staff continued to encounter resistance and reluctance from both Army Active duty and Reserve commanders to participate in the study. As an example of this lack of cooperation we present the case of one particular administration where, according to the site contact, over 200 Reservists women were expected to attend. At most other sites, women have been ordered to "show up" to hear our recruitment talk for the study. Upon arrival at the installation, however, project staff were informed that the Equal Opportunity Officer had not ordered the women to attend the introduction of the survey. The Equal Opportunity officer believed that the entirety of the participation should be voluntary including attendance at the survey introduction. This resulted in very few number women participating in the survey administration. This particular administration, which lasted two days and incurred significant project funds, resulted in only 37 completed interviews.

A low participation has been the case at many units during Year 3 and has resulted in a very disappointing and frustrating year for project staff. RTI project staff have persevered in their efforts, nonetheless, and have collected data on 584 reservist and 644 active duty surveys. The lack of cooperation from Army Active duty and reservist commanders have forced the Principal Investigator to request a one-year no cost extension that will be Year 4 of this study. All remaining project tasks will be carried out in Year 4 and are explained in full in section 3.0.

Soon after selecting the sites that satisfied our selection criteria, project staff members began developing strategies to recruit female Reservists. The initial step consisted of an official memo sent by our United States Army Reserve command contact to each of the selected Reserve Support commands. This memo served to introduce the study, and requested names of unit-level commanders that might be contacted by the RTI Project staff. These unit-level contacts would

assist with site visit logistics, and provide demographic and descriptive information on unit members. We then made initial contacts with the unit officials via phone.

We have been able to establish direct communication via phone with the designated unit and installation contacts. Some of them assigned a different person to handle the logistics of arranging a site visit to their location. In general, these newly assigned staff were more responsive than those we had been dealing with previously. However, the coordination and recruitment process in Year 3 has remained as difficult as in the prior two years of the study.

2.4 Data Management

During Year 3, project staff fully implemented the data processing procedures that were developed in Year 2. RTI staff ship the completed questionnaires from the data collection site to the data manager at RTI. The data manager labels each completed questionnaire that identifies the site from which the data was collected. These labels maintain respondent confidentiality and anonymity, as well as allow RTI staff to monitor the receipt of questionnaires and the data entry process. Furthermore, for quality control purposes the labels allow efficient identification of the host site and the number of completed interviews per site.

In Year 3 we initiated the development of specifications for editing the keyed questionnaire. These specifications were documented in a 'code book'. This extensive document guides the data entry process. Each completed questionnaire was sent to data entry where a supervisor monitored the keying of all the data collected into a software program that will allow prompt access to the data for preliminary examination and subsequent analysis. During Year 3 data have been keyed from 643 completed active duty questionnaires and 584 completed reservist questionnaires.

2.5 Analysis Planning

In the final months of Year 3, we developed an analysis team. The team was composed of a psychologist who has worked in the field of stress and a psychologist whose speciality area is statistics. It also included the principal investigator and project coordinator. The team then began to review the data on those subjects whose data had been entered in the computer files, which was more than half of the cases. One thing we did in this period was to begin to examine the data for information that could help inform our analysis plan. For example, we did a preliminary examination of the distribution on all questions to determine for which questions or variables the distribution was too narrow to allow separate analysis, for example only a very small proportion of the sample reported having "problems" with the use of illicit drugs, although

somewhat more reported “using” illicit drugs in the past year and even more reported using illicit drugs at some time in their lives. This examination of the distribution of the variables was an important first step to ensure that we would not develop an analysis plan which did not have data to support it.

The team then outlined the list of domains we would like to assess and variables we would like to create. This included predictor, buffer, and outcome variables. After these variables have been examined, we will decide which we will also examine in a multivariate framework. The predictor, buffer and outcome variables we outlined will be discussed in Section 3.2 Analysis Plan (for Year 4).

2.6 Demographic Data

With more than half of the total number of expected completed questionnaires for both the reserves and active duty, RTI staff have been able to examine preliminary demographic data. These data have been essential and useful for subsequent identification of women in Reserve or Active duty installations that meet our career field criteria and guarantee that our data are representative of women nationally.

The following sections include data on age, career field and rank for both the reserves and active duty.

2.6.1 Active Duty

Data from completed questionnaires have been keyed in for Army active duty women. The following exhibits present some of the preliminary demographic data. Exhibit 2.3 includes data on the age of the respondents.

Exhibit 2.3 Age of Respondents

Age Group	Number of Respondents	Percent
< 20 years	45	7%
20-24 years	241	39%
25-29 years	150	24%
30-34 years	82	13%
35-39 years	73	12%
40+ years	32	5%

The following exhibit, 2.4, includes the data collected on current rank of the respondents.

Exhibit 2.4 Rank of Respondents

Rank	Number	Percent
E1-E4	361	57%
E5-E6	178	28%
E7-E9	52	8%
WO1-WO4	2	.3%
O1-O3	25	4
O4-O6	11	1.7%

The career fields for the respondents is included in Exhibit 2.5. These data have been particularly essential in determining the installations, units and career fields of women that will be targeted during the Year 4.

Exhibit 2.5 Title

Career	Number	Percent
Communications	84	13%
Medical	99	16%
Administration	218	35%
Supply	123	20%
Other	93	15%

2.6.2 Army Reserve

RTI staff has also examined similar data for the reservist women. The data represented in Exhibits 2.6, 2.7 and 2.8 include respondent responses on age, rank and career field respectively.

Exhibit 2.6 Age of Reserve Respondents

Age	Number	Percent
<20	25	7%
20-24	81	14%
25-29	80	14%
30-34	105	19%
35-39	92	16%
40+	178	31%

Exhibit 2.7 Rank of Respondents

Rank	Number	Percent
E1-E4	185	32%
E5-E6	138	24%
E7-E9	58	10%
WO1-WO4	6	1%
O1-O3	106	19%
O4-O6	78	14%

Exhibit 2.8 Respondent Career Fields

Career	Number	Percent
Communications	33	6%
Medical	245	42%
Administration	184	32%
Supply	76	13%
Other	35	6%

2.7 Human Subjects Review

All developed materials were sent for review to RTI's Internal Review Board (IRB). The review ensured that all research being conducted by RTI on human subjects passes a battery of stringent requirements designed to meet the ethical treatment of all human research participants as well as federal human subjects guidelines. A copy of the IRB approval is included in Appendix E.

2.8 Summary

In Year 3:

- we administered the questionnaire to 643 Army active duty and 584 Reserve women;
- we modified the questionnaire to make it appropriate for the active duty women;
- we obtained cooperation from senior staff in the Reserve and Army Active Duty and recruited sites for data collection;
- we developed the data processing procedures and data entry coding;
- we began to develop the analysis plan.

3.0 Year 4

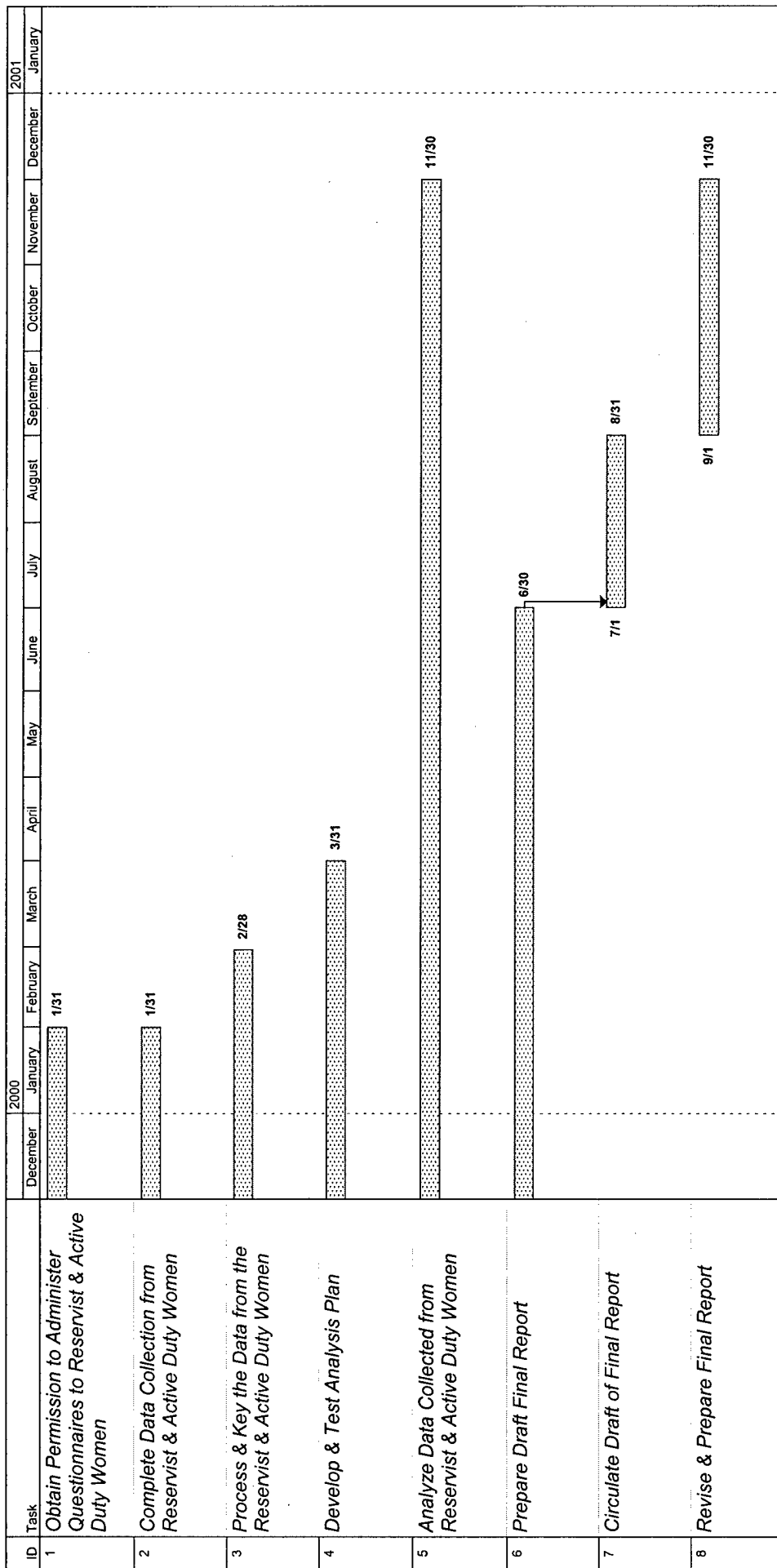
In Year 4, we will complete the data collection and start on the next phase of the project, the data analysis. See Exhibit 3.1 which provides a time line for these tasks.

3.1 Activities Planned For Year 4

In Year 4 we will complete the following activities:

- Continue to seek permission from Army Reserve unit and Active duty installation commanders to administer questionnaires to Reservist and Army Active duty women in order to complete our goal of 800 reservist interviews;
- We may need to obtain a sample of greater than 800 of each group to ensure we have a representative sample because we have found that our sample to date does not match the target sample distribution in terms of occupation distribution;

Exhibit 3.1 Timeline for Year 4 Activities



- Proceed with the planning, coordination and completion of site visits until all Reservist and Army Active duty interviews are completed;
- Develop and complete a descriptive analysis plan that will facilitate the development and completion of both the descriptive and regression plan and analysis;
- Prepare a draft of the final report and distribute the report for review to Army staffers and researchers in the field of military health.

3.2 Analysis Plan

The investigation will examine the nature and outcomes for women of stressors associated with military life. The analysis plans will include three steps: preparing the data, definitions of outcomes and study variables, and statistical analyses. First, we will clean the data and create codebooks for statistical data analyses, including identifying missing data and ensuring the accuracy of skip patterns. Second, outcomes of the interest and study variables will be specified and defined according to the literature and/or the distribution of the frequency for each study variable.

The following *outcome domains* will be examined: (a) mental health (e.g., morale and GHQ); (b) substance abuse (e.g., alcohol alone, alcohol and drugs combined); (c) performance; (d) health problems (e.g., overall, injuries, and unable to work or cut back from work); and (e) treatment utilization.

The following *predictors* will be examined in relation to our outcomes of interest:

- Job stressor variables: pressure and autonomy;
- Characteristics of supervisor, job satisfaction, environment-health, safety, unpleasantness, characteristics of co-workers, and role of the supervisor;
- Stressful life events;
- Daily hassles;
- Traumatic events;
- Racial discrimination;
- Sexual harassment, including gender discrimination;
- Woman in man's occupation;

- Financial status;
- Marriage and family variables;
- Deployment;
- Demographics: age, race/ethnicity, years in services, and occupation; and
- Military characteristics: rank.

In order to test the hypothesis that the relationship between predictors and the outcomes of interest will be influenced by social support characteristics, we will examine the following *buffers*, including social support and support from specific groups such as kids, spouse/partner, supervisor, and co-workers. It is expected that the estimated association between stressors and mental health and health comes will depend on the presence of social support characteristics.

We are in the process of conducting a series of descriptive analyses for outcome measures and study variables to help us define study variables. A summary of variable names, measuring items, and preliminary findings for our outcome measures and study variables can be found in Appendix H. These are draft tables because we are still in the process of reviewing and finalizing the analysis variables.

Statistical analytic procedures will include descriptive analyses, bivariate analyses, and multiple logistic regression procedures. In addition, based on the findings from logistic regression analyses, we will conduct structure modeling with multiple indicators for latent constructs to further test for the hypothesized relationship among our outcomes of interest, predictors, and buffers.

A brief discussion of statistical analysis plans is given below. First, descriptive analyses will be conducted to determine the characteristics of the study sample and of stresses among women in the military. Prevalence estimates of all independent and dependent variables will be generated. Bivariate analyses will then be performed to examine (a) differences between active duty and reservists in prevalence rates and (b) the relationship between each predictor of interest and the outcome under study. The purpose of the later bivariate analyses is to identify social and demographic characteristics as well as a variety of different types of stresses that might be associated with physical health, mental health, substance abuse, treatment utilization, and/or performance.

To understand the independent association between predictors under study and outcomes of interest, multiple logistic regression procedures will be conducted to estimate the likelihood of

having the outcome characteristic in relation to a specific predictor when holding constant other social, demographic and active/Reserve variables. Separate logistic regression models will be used to estimate the strength of associations between stresses and a number of different outcomes (i.e., physical health, mental health, substance abuse, treatment utilization, and performance). To determine whether social support characteristics influence the relationship between stresses and the outcome of interest, interaction terms for stresses and social support characteristics will be examined separately for each outcome under study.

Finally, the findings from logistic regression procedures will provide important guidance concerning the selection of study variables and outcomes for further testing structural models. The SAS System's CALIS procedure (SAS Institute Inc., 1989) will be used to test the covariance structure models with multiple indicators for all latent constructs. The findings from structural models will provide additional estimates about the nature and health outcomes of women in the military life. For these statistical analyses, separate models will be developed for active duty Army and Army Reserve samples.

3.3 Problems Anticipated in Year 4

The project staff does not anticipate major unusual obstacles during Year 4 (1999-2000). At the time of this report Army Active duty and reservist commanders were being contacted to continue data collection until January 30th 2000. Levels of cooperation overall have varied during Year 3 and the same can be expected for Year 4.

We have already initiated expanded travel to installations that were originally considered outside of the geographical scope of the project. Furthermore, we will continue to travel to many more Army Reserve units than originally planned because the number of women at each unit has been smaller than we expected. In order to obtain the distribution of MOSs we are seeking for active duty women, we may also have to travel to more distant locations than planned. We will however to keep our costs within our budget.

We do not anticipate any problems with data analysis, since preliminary reviews have demonstrated that the data collected will not require extensive cleaning or recoding. However, such a large amount of data will require extensive univariate and bivariate analysis, followed by rigorous regression analysis.

REFERENCES

1. Lazarus R, Folkman S. Stress, Appraisal, and Coping. New York: Springer, 1984.
2. SAS Institute, Inc. 1989. SAS/STAT ® User's Guide. Volume 1, Version 6. Cary, NC: SAS.

APPENDICES

APPENDIX A
YEAR 1 ANNUAL REPORT

THE NATURE AND OUTCOMES FOR WOMEN OF STRESSORS ASSOCIATED WITH MILITARY LIFE

YEAR 1 ANNUAL REPORT

1.0 INTRODUCTION

As background, in Section 1.0, we first summarize the literature on stressors and outcomes associated with stressors, focusing particularly on findings on women. We include a brief summary of those research findings that apply specifically to military women. Subsequently, we present our technical objectives, our hypotheses, and our methodology for conducting our study. Finally, we discuss our plans for manuscripts and reports and for a roundtable we will convene for the purpose of developing recommendations on strategies for reducing stressors and negative outcomes for military women. The second section of the report describes our Year 1 activities. The final section summarizes the activities we have planned for Year 2.

In this section, we briefly review the research literature on sources of stress and the relationship of stress to negative outcomes, such as health and mental health problems. We also describe a model that delineates the relationship between stressors and outcomes. Included in this model are other factors that have been found to mediate the relationship between the two. We then discuss the research literature on stressors of, and stress-related outcomes for, women in the Military.

1.1 Research on Stressors

Over the past two decades, the relationship between exposure to stressors and task performance, physical health, and mental health has been extensively examined. Although it is widely recognized that stressors are prevalent in our everyday lives and can never be fully avoided, researchers are particularly interested in understanding (a) characteristics of individuals, (b) aspects of stressful events and conditions, and (c) other characteristics of the situation that result in either acute and/or long-term negative psychological and physical responses.

A number of conceptual definitions of stress have been put forth in the literature (1,2,3,4,5), yet the field of stress research suffers from the lack of a clear operational definition of the construct (6,7,8,9). Historically, stress research has focused on exposure to events or conditions (primarily noxious) and the outcomes that result from such exposure. Consequently, there has sometimes been confusion regarding the exact referent of the term "stress": Is it the stressor or the response to the stressor? We adopt the approach used by Lazarus and Folkman (10). We refer to the noxious stimuli or environmental demands that are presented to individuals as the "stressors" or "stressful event." We reserve the term "stress" to refer to "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (10). We refer to the short-term and long-term sequelae of exposure to stressors as "outcomes" or "stress-related outcomes."

1.2 Classifying Stressors

Because myriad stressors affect people's lives, it is necessary to group them in ways that will facilitate our understanding of them. One way of examining stressors is by juxtaposing "life event" stressors versus "daily hassles." We refer to this as the "**frequency/ordinariness**" distinction or classification. Research on life event stressors gained popularity with the development of life event scales by Holmes and Raye (11) in the mid-1960s. Life events include experiences that happen relatively infrequently to most people and that tend to produce serious changes in our everyday lives. Examples include marriage, divorce, changing jobs, moving, or having a child. Initially, life event stressors were thought to have much more serious impacts on our lives than the more common stressors we encounter each day.

"Daily hassles" are the frequent but relatively ordinary stressors of everyday life, such as a long commute to work with heavy traffic or having to repeatedly redo certain tasks because of equipment failures. Research on daily hassles became prominent with Kanner et al.'s (12) work on this subject in the early 1980s.

Yet another way of studying stressors is to group them by their **severity/intensity** (e.g., mild, moderate, severe, and traumatic) (12,13). Severity may be seen as a continuum that crosscuts the previous classification of stressors (by frequency/ordinariness) (see Figure 1). One can assess severity using either objective or subjective criteria. The life event stressor literature originally focused heavily on objective criteria for classification of severity (e.g., divorce, changing jobs, or having a child were all considered to be innately important stressors). The traumatic stress research field still relies primarily on objective criteria for deciding whether the stressor is traumatic, and there are some empirical reasons for using objective criteria. Even when an individual does not "rate" a life event or traumatic stressor as being subjectively severe, the experience of such a stressor may nonetheless be significantly related to outcomes (14). In research on stressors other than traumatic stressors, however, there has been a movement toward subjective assessment of severity (15,16,17).

Figure 1. Stressors Classified by Level and Severity

	Level of Severity			
	Mild	Moderate	Severe	Traumatic
Daily Hassles				
Life Event Stressors				

To illustrate how specific types of stressors fit into the framework in Figure 1, the second row of the table might include a move by a young single person with limited possessions from one apartment to another of similar quality close by with about the same rent because it was on the second floor rather than on the third (Column 1, mild). The column labeled "moderate" in the second row might include as an example a promotion with a raise and increased responsibility. A life stressor rated as severe might be getting married for the first time at age 38 to someone with custody of four children who lives in another city requiring you to relocate and find a new job. A traumatic life event stressor for the table might be being raped by a stranger in your apartment parking lot.

Yet another way of classifying stressors is by their **source**, that is, the life domain in which the stressor operates or from which the stressor stems (e.g., work, home). Sources most commonly examined include stressors associated with job, with marriage, and with being a parent (18,19,20,21). Other domains/sources of stressors would include other family members or friends (e.g., a meddling mother-in-law or a dying friend); the environment (e.g., living in a neighborhood plagued by gangs and drugs); and health (e.g., having a debilitating disease). Sources of stressors may be seen to crosscut the other two categorizations illustrated in Figure 1. That is, within all of the cells in Figure 1, the stressors may be classified as stemming from a source type. Cell 1, mild daily hassles, for example, may contain stressors associated with work, with parental responsibilities, etc.

Finally, much research in stress classifies stressors by **general characteristics**, such as overload, inter- or intra-role conflict, and lack of control (19,21,22,23). Categorizing stressors in this way allows the researcher to examine stressors at a "higher level"; for example, overload may be associated with work, with parental responsibilities, with marital responsibilities, or with the interface of responsibilities of work and being a parent. One can thus draw conclusions about stressors based on their general characteristics rather than the specifics of a particular stressor.

1.3 Nature of Stressors

Here we expand on some important qualities of different stressors types, including gender differences.

1.3.1 Stressors by "Frequency/Ordinariness"

(a). **Daily Hassles.** Kanner et al. (12) defined daily hassles as "irritating, frustrating, distressing demands that to some degree characterize everyday transaction with the environment" (p. 3). Recent research suggests that daily hassles may have more negative outcomes than stressful life events, such as divorce or job change. Research has found that women tend to report more daily hassles than men (17) and to feel greater stress from them.

(b). **Life Event Stressors.** A significant body of research has been devoted to defining and examining the impact of major life events on functioning (24). *Stressful life events* happen to many people at some time in their lives. Early studies that focused on stressful life events were strongly influenced by the seminal work of Holmes and Rahe (11) who created a ratio-scaled schedule of 43 broad-spectrum recent life events that were believed to require some psychological adjustment on the part of the person. Research suggests that "positive" life events, such as marriage or promotion, may also require adjustment and so may induce stress. There have been conflicting findings as to whether men or women report more stressful life events.

1.3.2 Stressors by Severity/Intensity

Although there is a certain fuzziness to "rating" a stressor on a continuum from mild to traumatic, certain criteria must be met in order for a stressor to be defined as "traumatic" according to psychiatric nosology. A traumatic stressor (also sometimes referred to as an "extreme event") is defined by the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (25) as one that is "outside the range of usual human experience and would be markedly distressing to almost anyone." Some of the most frequently discussed traumatic stressors are those associated with war. Other extreme events include fires, serious accidents, being the victim of violent assault, and natural disasters.

1.3.3 Stressors by Source

We consider here stressors related to occupation, family, environment, and to being a woman in a man's occupation.

(a). Occupational Stressors. Occupational stressors can generally be described as objectively or subjectively defined. Objectively defined stressors that have been studied include physical properties of the working environment (e.g., physical hazards, noise), time variables (e.g., such as length of workday, shift work), social and organizational properties of work and its setting (e.g., workload and monotony), and changes in job (e.g., demotion and transfer). Subjectively defined stressors that have been examined include role-related stress (e.g., degree of control over work processes, responsibility for people), relationship to co-workers, support from superiors, and underutilization of abilities (26,27).

For those in the Military, environmental and occupational stressors may be inextricably entwined. Harsh living conditions, exhausting physical demands, and other highly stressful situations experienced when deployed in certain locations are obviously both environmental and occupational.

(b). Family-Related Stressors. Although both men and women may experience stressors related to being a spouse and a parent, women often are affected disproportionately because they remain the primary caregivers for most children and often have primary responsibility for household tasks, even when they work outside the home. Women in the workforce with children experience the stress of attempting to balance the responsibilities of the family with the responsibilities of work—a particularly difficult task for women in the Military because they may be assigned or deployed to locations to which they will not be able to take their children. It is not surprising then, that women are more likely than men to report stressors related to children and marriage (18,19,20,21).

(c). Environmental Stressors. Environmental stressors have been studied in an effort to determine their relationship to functional outcomes. For example, a good deal of literature has focused on describing how living conditions affect the functioning of individuals. Researchers have examined such aspects of the environment as predictability, crowding, and extremes of climate to determine what aspects of the environment are more stress-inducing, and what outcomes result from exposure to stressful environmental stimuli (27,28).

(d). Stressors Related to Being a Woman in a Man's Occupation. It has been recognized that women experience numerous unique stressors associated with their gender and sex roles (29,30). One important component of such stressors has been being negatively evaluated in the workplace by men. Ever since women have begun to move into predominantly male occupations in significant numbers, there has been much discussion, and some research, on the effect of being a woman in a man's environment. One of the best known early studies on this subject was conducted by Kandel et al. (31). Research has found that women making such inroads face a variety of stressors, including being stereotyped; encountering negative attitudes of supervisors and colleagues; being forced to perform at a higher level than men in order to be considered "as good" as men; being sexually harassed and discriminated against; and using equipment and procedures developed for men (32,33). (The vast majority of the victims of sexual harassment and discrimination are women [34].) A burgeoning area of research has focused on delineating the negative outcomes that may manifest themselves in response to various forms of sexual discrimination and harassment in the workplace, such as differential hiring, work assignments, promotions, and exclusion from social and peer networks in which work occurs (30,34).

1.3.4 Stressors Based on General Characteristics

Some of the types of stressors that have been examined most often are overload, role conflict, and lack of control over work. A model proposed by many researchers is that stress results from having higher levels of demands placed on one than one has available resources to meet those demands (35). The greater the discrepancy, the greater the stress. It has been found that stressors with the same characteristics do not necessarily have the same effects (e.g., overload can have differential effects depending on whether the domain is work or home).

With regard to research on women, there have been conflicting findings as to whether work or family responsibilities are the greater source of stress for women, and whether working outside the home increases or decreases stress. Many studies have found that, for women, having both a job and children is likely to increase stress because of conflicts between the two responsibilities (18,22,36,37). Some studies, however, have found that having a job outside the home decreases a woman's overall level of stress (31,38) and that working outside the home can actually buffer stressors at home (39). These conflicting findings appear to be explained by a variety of mediating variables, including the amount of support one has in the home (e.g., married working women tend to have less stress from having children than single working women) (31); type of occupation (35); number and age of children (35,40,41); support from supervisor (19,41); control over one's work (42); satisfaction from one's work (21), and so on. Some research suggests that men have fewer conflicts and less stress than women related to the work/job interface because women tend to have a stronger identification with the parent role than do men (43). Controlling on one's identification with the parent role appears to at least partially decrease gender differences in the experiences of stress.

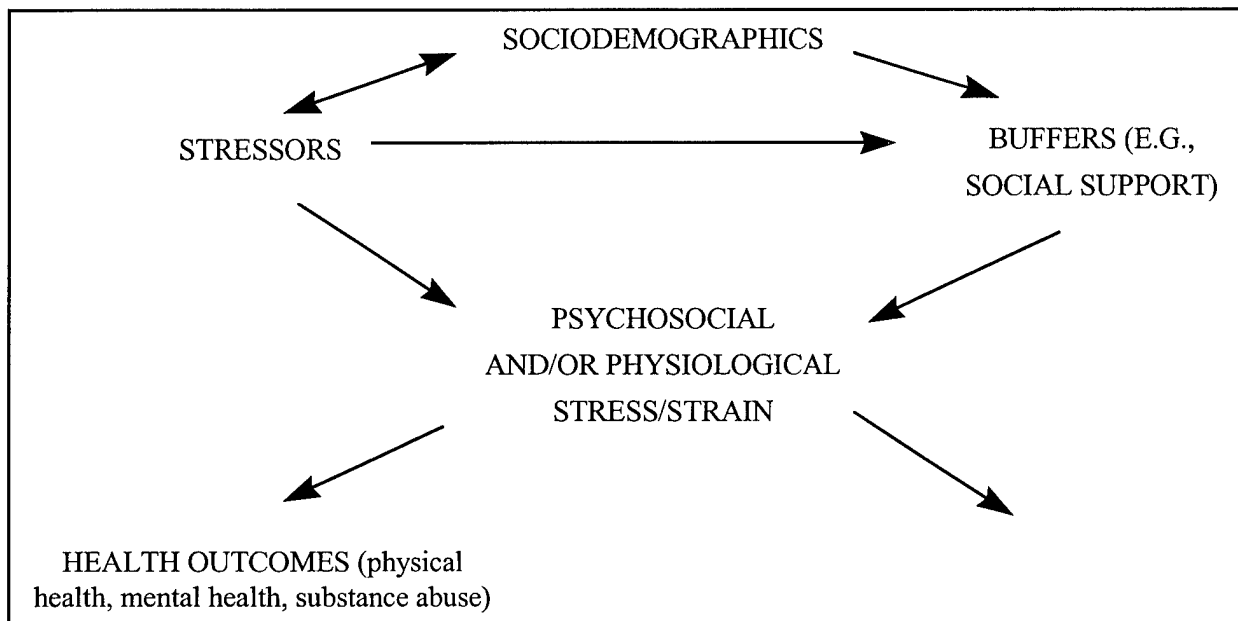
1.4 Stressors and Women

In the report *Working Women's Health Concerns: A Gender at Risk*, by the Bureau of National Affairs (44), many leaders of national women's organizations consider stress to be the most serious hazard faced by women. Findings from a wide variety of studies suggest that women perceive a greater number and more severe stressors in their lives than men do (36,37,42,45). Furthermore (as discussed later), women also tend to have more negative outcomes from stress than do men. Some of this gender difference appears to be the result of more stressful work/home conflicts among women, but even women without children tend to report higher levels of stress than do their male colleagues. Some of the other hypothesized reasons for gender differences include value differences (e.g., women tend to place higher value on nonwork life than do men while men's identity is more strongly tied to their work role); lack of "fit" between the woman and a male work environment, which may emphasize masculine-oriented behaviors and such characteristics as competitiveness; being devalued and having less support from male colleagues and supervisors because of their gender; and a greater willingness to admit feeling stress and endorse items asking about health and mental health problems.

1.5 Variables Mediating Between Stressors and Outcomes

A number of factors can intervene between a stressor and its potential effects. Figure 2 provides a model of the relationship of stressors to outcomes, including several important intervening variables. Before discussing negative outcomes, we would like to briefly mention two sets of variables that may be seen as intervening, mediating, or buffering variables between stressors and outcomes: sociodemographics and social support. **Sociodemographics**, such as age, income, education, and gender have all been found to affect the relationship between

Figure 2. Model of the Stressor/Outcome Relationship



stressor and outcome (37,46). **Social support** is probably the most widely studied buffer of stressor outcomes and has been found to be one of the most effective (22,47,48). The magnitude of the impact of social support has been found to be associated with the source of the support (e.g., supervisor, colleague, friends, spouse) (1,4); for example, supervisor support has been found in many studies to be one of the most important sources of support for women. Women tend to use social support when available more often than men do, and in some studies it has been found to be more important for women than for men (19,41).

1.6 Stress-Related Outcomes

1.6.1 Psychosocial or Physiologic Stress

The effect of major stressors that are not well buffered is perceived stress that puts a strain on an individual's resources. Such stress is, unfortunately, a condition that cannot be totally avoided. Virtually all of us feel stress in our work or in our families from time to time. Such stress may result in minor irritability or fatigue. Over time, if the stressors are serious enough or persist long enough, and if we do not develop mechanisms for coping with them, they can produce more serious problems with functioning, health, and mental health.

1.6.2 Stress and Functioning

Increased levels of stress in response to gender-role stressors, including sexual harassment, have been found to be related to increased depression, anxiety, irritability, demoralization, and marital dissatisfaction (29,30). As noted above, a veritable multitude of occupational stressors have been examined for their impact on performance. Shift work has been demonstrated to be related to higher rates of on-the-job accidents. Additionally, it has been estimated that up to 20% of workers are unable to adapt to shift work and leave those jobs requiring

shift work (49). Increased noise levels have been demonstrated to be related to fatigue and impaired efficiency on the job. Machine-paced workers have reported higher rates of boredom and job dissatisfaction than did nonmachine-paced workers (27). Likewise, underutilization of abilities has been demonstrated to be very strongly related to job dissatisfaction and job boredom. Significantly higher levels of occupational instability were associated with exposure to traumatic stressors in Vietnam and subsequent development of posttraumatic stress disorder (PTSD) (50).

One extreme form of the negative effect of stress on functioning is burnout, which is defined as "a state of physical emotional or mental (i.e., cognitive) exhaustion" (51, p. 192). Burnout is marked by physical depletion and chronic fatigue, by feelings of hopelessness and helplessness, and by the development of a negative self-concept and negative attitudes toward work, life and other people" (51, p. 193). It has been most often studied among health care workers and social service workers. Much research has been done, for example, on burnout among nurses and physicians (9,52,53). Burnout appears to be the result of an inability to cope with stress and has been found to produce negative outcomes not only for the individual, but also for his or her employer, co-workers, and family. Many studies have found that women report more burnout than men do (44; p. 195 in 51), although higher rates of reported burnout among women do not always result in poor performance among women (54). In addition to contributing to lower levels of productivity, absenteeism, more interpersonal friction, and possible subsequent health problems (51,55,56,57), burnout has also been blamed for high job turnover among teachers (56,57,58) and nurses (9,59) among others.

1.6.3 Stress and Physical Health Outcomes

In reviews of the literature on the relationship between stress and physical health, both Elliott (60) and Bloom (9) reported that the evidence linking stressful life events with subsequent physical disorder seems very persuasive. Research began when it was discovered that, as a result of exposing animals to severe physical or psychological trauma, the functioning of a wide array of physiological systems was impaired and even death could occur. Later research with humans suggested that major life disruptions contributed to the development of many disorders, ranging from minor to major, such as infections, hypertension, heart attacks, cancer (8), and headaches and gastrointestinal disturbance (60). Likewise, occupational stressors have been implicated in the development of coronary heart disease, hypertension, migraines, peptic ulcers, ulcerative colitis, and diabetes among others (22). Furthermore, victims of sexual harassment report negative health consequences, such as increased headaches, decreased appetite, and sleep disturbance (30). Increasingly, research has shown that exposure to high levels of psychological stress (e.g., traumatic stressors) can produce elevated rates of health complaints and physician visits (60,61). Although this association is present in men, it seems especially pronounced in women.

1.6.4 Stress and Mental Health Outcomes

Stress plays a significant role in the development of psychiatric disorders and is related to impaired psychological functioning. Increased stress in response to stressors has been implicated in the development of depression, generalized anxiety disorder, and substance abuse (8,60). Negative mental health outcomes that have been found to be related to occupational stressors include increased anxiety, depression, substance abuse, irritability and somatic complaints. Exposure to traumatic stressors can be related to the onset of a variety of negative mental health outcomes, including depression, substance abuse, anxiety disorders

(including PTSD), and personality disorders (50). PTSD is the most widely studied psychiatric disorder that can occur following exposure to a traumatic stressor (63,64). With regard to environmental and occupational stressors, a recent study by King et al. (65) using the National Vietnam Veterans Readjustment Study data found that a malevolent environment (e.g., poor food, water, climate) had both the strongest direct effect and the strongest total effect (direct + indirect) effect on PTSD outcomes of the four dimensions of war zone stress.

1.6.5 Stress and Substance Abuse

Numerous studies have found elevated rates of alcohol consumption among those with elevated levels of stress (66). In some studies of women, however, alcohol use has not been elevated but psychotropic medication (e.g., tranquilizers) has been (67). Some studies have found subjects actually reduced their alcohol use during stressful periods (68,69). Again, a variety of factors may influence the relationship between stress and substance abuse, such as sociodemographics and coping style.

Exposure to traumatic stressors has been strongly implicated in the elevated rates of substance abuse and dependence among veterans (70), and PTSD has been found to be highly comorbid with substance abuse (50). Women who served in Vietnam with high levels of war zone stress were found to have significantly higher rates of alcohol abuse and dependence than did other women veterans of the Vietnam era, while women theater veterans who were exposed to lower levels of such stress did not have significantly more alcohol disorders than did other women veterans of the Vietnam era (50).

1.7 What We Know About Stressors of Military Women

1.7.1 Who Are the Women Who Serve in the Military?

The number of women in the Army has increased dramatically in recent years. In 1995, approximately 200,000 women (14% of all active-duty forces) were women. However, in the first part of 1994, 19% of new enlisted recruits were women (71), and it is expected that women will comprise 20% of the active-duty force in the near future. The largest group of active duty women are in the Army—approximately 70,000 women. In addition to the active-duty component, another 140,000 reservists are women, or approximately 16% of Reservists. In 1994, approximately 47,320 women were in the Army or Air National Guard (72) or approximately 8% of the Army Reserve and 14% of the ANG.

About 40% of active-duty women were classified as minority group members (53% in the Army) as compared to women in the National Guard who are predominantly white: 67% for Army Reserve and 81% for ANG. The proportion of women in the Reserves who are minority tends to fall in between that for active-duty women and National Guard women. It has been said that women in the active-duty military are at double jeopardy for being discriminated against because they are not only female but also disproportionately minority (73). Further, 27% of active-duty women are black compared to only 17% of active-duty men (73). Negative attitudes toward single parents also disproportionately affect women because they, and particularly black women, are the group most likely to be single parents: 13.3% of black female military personnel are single parents compared to 7.4% of white female personnel, 2% of black male personnel, and 1.4% of white male personnel (73).

Women now serve in a much broader array of positions than ever before. In 1987, all combat service support positions in the Army were open to women, and in April 1993, the

Secretary of Defense lifted the prohibitions against women flying combat aircraft. The Army has opened additional positions to women so that now approximately 67% of all positions in the Army will be open to women (71). This means women in the Military are now subject to many of the same stressors that men have been subject to.

1.7.2 What Previous Research Has Been Done on Stressors of Women in the Military?

Research on stressors of female military personnel have had findings similar to studies using female civilians. Women in the Military tend to report higher levels of stress (36) and burnout (74) than do men in the Military. Work/family conflicts are among the greatest sources of stress (20). We would expect stressors related to conflicts between family and work to be at least as strong for military as for civilian women because military women may be subject to temporary duty assignments away from home at short notice, may work long hours and on rotating shifts, and are subject to deployment.

As with civilian women, social support is a very important stress buffer for military women, more important than for military men (40). Unfortunately, available supervisor and colleague support may be low because of negative attitudes toward women. Deployment raises stress levels (75,76), and deployment tends to produce behavior problems in children (77,78).

Working in occupations in which they are a small minority and/or occupations that men tend to view as "masculine" also are important sources of stressors (79,80) for military women because of negative evaluations and resentment of male supervisors and colleagues; stereotyping; poorly fitting clothing and equipment; and sometimes limited facilities for privacy for personal hygiene. For example, physical requirements and equipment are often not modified or modified inadequately for women, which can result in minor but nonetheless stressful injuries. Because women's physiology is different from men's, physical requirements and standards for men do not well accommodate women (e.g., women have better cold tolerance than do men but less heat tolerance; women and men have different levels of upper body strength). DeVilbiss provided an insightful look at the situation for women on combat maneuvers in her participant observation study (81). She talked about many of the day-to-day problems of living in a man's environment (e.g., the blisters women all developed on their feet because the boots did not fit them). She also described how men who had difficulty carrying out a task or became angry or emotional were excused by other men for various reasons whereas women in the same situations were seen to demonstrate their unfitness for military duty.

Sexual harassment is another stressor felt by many military women. In a 1991 study of women in the Navy, for example, 44% of enlisted women and 33% of officers reported being sexually harassed (82). Most of these women dealt with the incident(s) by taking actions to avoid the person or by telling the person to stop. Few reported the incident. However, 7% of enlisted women and 2% of officers reported to sick call as a result of sexual harassment.

Exposure to extreme events (i.e., trauma) can be another important stressor for women, particularly the trauma of dealing with dead and dying soldiers and civilians. Some studies suggest that women may feel more stressed and have more negative psychological reactions to trauma (83) than do military men, especially when they have had a history of abuse (84). The National Vietnam Veterans Readjustment Study (50) findings indicate that 8.5% of all women Vietnam veterans were current cases of PTSD 15 or more years after their military service, confirming the belief by some that service in a war zone can be traumatic even for those not directly involved in combat. Other more preliminary studies that have been conducted using

samples of convenience also support the notion that exposure to wartime stressors, particularly to death and dying, result in both physical and psychological aftereffects for women even though women do not serve in combat roles (85,86,87,88,89,90,91). Recent research on those who served in the Persian Gulf War, for example, includes studies of stressors associated with symptoms of PTSD among individuals who handled human remains (92,93).

Outcomes of stress experienced by women in the Military are similar to those in civilian occupations and often result in problems with health and mental health. A study of sick call diagnoses among personnel on U.S. Navy ships found significantly higher rates of personality disorder, stress, and adjustment reactions among women than among men (94). Women soldiers deployed during the Persian Gulf War were almost twice as likely to be diagnosed with psychiatric disorders than were men (95). Research on women in the military has found higher rates of health services among women than among men (96,97,98,99,100). These findings are similar to findings among civilian women and, among both groups, may be related to higher levels of perceived stressors. The lower rate of retention for women than men has also been attributed to higher levels of stressors (101).

1.7.3 What Information Do We Need to Better Understand the Nature and Effects of Stressors on Women in the Military?

Much has still to be learned about stressors of women in the Military in general and in the Army and Army Reserve specifically. Although stressors of military women have been found to be similar to the stressors of other women, and although negative outcomes related to stress appear to be similar for both populations, the information currently available is insufficient to develop effective intervention and prevention programs.

First, we need data on stressors and outcomes on a broader sample of women in the Army and Army Reserve. Previous studies have been focused particularly on nurses and small groups of other women, such as military police units. These data do not represent the wide variety of occupations of Army and Army Reserve women. We particularly need more information on the Army Reserve. We have found no studies to date on stressors of these women.

Second, we need more detailed information on the stressors themselves—it is insufficient to say that "working in a predominantly male environment" is a stressor. What are the specific factors that make these roles stressful, and why are they less stressful in some units than in others?

Third, we need more information about the relative importance of different types of stressors and how stressors relate to sociodemographic characteristics, occupation, and so on. Prevention and intervention programs can then be targeted for particular groups of women. For example, the most serious stressors for unmarried junior enlisted personnel may be different from those for older married women officers. The most important stressors of nurses are likely to be different from the most important stressors of combat support personnel.

Fourth, and similarly, we need to better understand those factors that mediate stressors. For example, how does social support influence whether a particular type of stressor negatively affects one woman and not another with similar demographic characteristics? What organizational structures and programs might be changed or developed to help women in the Army and Army Reserve access and use such buffers as social support more effectively?

Our study will address these issues and is examining the following questions:

1. What are some of the most important stressors of women in the Army and Army Reserve, and what is relative importance of the various stressors? We need information about both war zone and non-war zone stressors, both acute and chronic stressors, and stressors of women in the myriad roles they now occupy in the Army.
2. What are the negative outcomes that are the result of stress, and how is exposure related to outcome? We need information on the relationship between stressors and diverse serious outcomes: health consequences, mental health consequences, substance abuse and dependence, and job performance and retention.
3. How do mediating variables affect the relationship between stressors and outcomes? For example, how do sociodemographic characteristics, such as age and rank, mediate the effects of stressor exposure on outcome? What potential buffers—such as support from supervisor—are most effective at reducing negative outcomes?
4. What characteristics of the unit are associated with negative outcomes?

Our study will provide data never available before—data that Army decisionmakers and planners can use to develop mechanisms, such as prevention and intervention programs, to reduce stressors and their impact on Army women.

1.8 Hypotheses/Purpose

Our purpose is to (a) identify the most important stressors and their outcomes among women in the Army and Army Reserves; (b) describe the relationship between stressors and risk factors, including mediating such factors as sociodemographics and buffering agents; and (c) make recommendations about prevention strategies that might be employed to reduce stressors and their impact.

Our general hypotheses are that

- exposure to stressors is associated with poorer outcomes, including subsequent health and mental health status, substance abuse, and occupational functioning;
- some exposures (e.g., exposure to enemy fire) are more pathogenic than others (e.g., exposure to extreme living conditions); and
- sociodemographic and other characteristics mediate the effect of stressors on outcomes.

We will examine these hypotheses in a multivariate framework, so that we can assess the long-term, independent effects of a variety of military stressors while controlling for potentially predisposing characteristics of the individual.

The conceptualization that will guide our analyses is the model in Figure 2. This is consistent with Lazarus and Folkman (1) and their colleagues who have advanced the position that the patterns of adjustment after stress exposure differ because they are influenced by the variance in characteristics of both the stressor and the individual.

The data from this study will enable us to assess the distribution of stress exposure across women in the major occupational specialties and different deployment statuses that women hold in the Army and Army Reserve today. Although descriptive, this information is critical for thinking about potential preventive efforts. Further, although within the scope of this study (i.e., because of its exploratory nature and budget limitations), we will not be able to collect data on a representative sample of women in the Army and Army Reserve and cannot therefore provide

prevalence estimates of stressors and outcomes of women in these two Services, there is nonetheless much we can contribute to the knowledge about stressors of women in the Military. We will be able to provide data on a broader array of women, stressors, occupations, and outcomes than has ever before been gathered; our data, therefore, will provide a better portrait of the most important stressors of women in these branches of the Military, particularly women in the most common occupational specialties. Second, we will be able to examine the relationship between stressors and outcomes and to determine what variables mediate these relationships. Thus, the data from this study will enable us to examine the more immediate health, mental health, and performance consequences of the kinds of stress to which women in the Army are routinely exposed.

Our specific hypotheses for the study are based on findings from the literature to date:

- Women in occupations that present more physical danger and more serious daily hassles, such as combat support and military police, will report more stress and have more negative outcomes than will women in other occupations.
- Women in units likely to be deployed first will report more stress but will have significantly higher negative outcomes only if deployment has occurred recently or is likely to occur soon.
- Women with children in the home will report more stress than will women with no children; single mothers will report more stress than married mothers; women with younger children will report more stress than women with older children.
- Women in units that are predominantly male (e.g., 80% or more) will report more stress and have more negative outcomes than will other women.
- Women in their first year of enlistment will report more stress than will other women. Older women will report more stress than will younger women other than first-term women. Both first-term and older women will have more negative outcomes than will other women.
- Women with less education will report more stress and have more negative outcomes than will more educated women.
- Women who have served in a war zone or similar hostile situation where they were subject to threats to their lives will have more negative outcomes than will other women, controlling on age and education.
- The greatest sources of stress will be being a parent of young children, being in a predominantly male unit, being in a unit where the males have a strong negative attitude toward women serving in their unit, and age.
- Mediating variables will include sociodemographics (age, education), support of supervisor, support of male colleagues, and finding the job rewarding.

- Negative outcomes associated with stressors will include more use of health services, more sick time, more reported health problems, more psychological distress, more use of alcohol, and less commitment to staying in the Military. In general, other performance measures are not expected to be significantly related to stress.

In our primary data collection, we will oversample units that contain individuals who have served in a war zone or in regions in which soldiers were at risk of being injured or killed by enemy fire, such as Somalia. If we are able to obtain enough such respondents, we can examine models of traumatic stressors on outcomes.

Because of the very limited previous research on stressors of women in the Military, at least a portion of the analyses may be best described as "informed exploration." We believe, however, that an exploratory approach is appropriate given the state of current knowledge about the impact of stressors on women soldiers; we also believe that the risk of spurious findings is reduced by the use of a specific conceptual model to drive the analyses.

1.9 Technical Objectives

Our technical objective is to identify experiences and conditions that are the most stressful to women in the Army and Army Reserve and that have the most frequent and/or most serious negative outcomes for the women and the Army. We have accomplished the first step in this process (a) by using focus groups and self-report questionnaires to collect data on major stressors and outcomes from women currently on active duty in the Army, and (b) by scheduling focus groups for the Army Reserves (we expect to complete these in the coming weeks).

In Year 2, we will carry out the second stage of our objective by using the newly collected data to determine (a) the nature, likelihood, and outcomes associated with various types of stressors for women currently in the Army, and (b) the mediating effects of sociodemographic characteristics of the individual, the women's occupation and family, the environment, and other factors may have on outcomes.

2.0 YEAR 1 ACTIVITIES

One important task for the first year of the study was obtaining cooperation and access for the study from senior Army officers and senior Army civilian personnel. A second task was conducting focus groups with active-duty and nonactive-duty Army women. This involved developing a focus group protocol to conduct the groups; obtaining human subjects' clearance; conducting the focus groups; and summarizing the comments from the groups. The other task for Year 1 was compiling instruments to assess different types of stressors and using these to develop a draft questionnaire.

2.1 Obtaining Cooperation and Access

In an attempt to obtain an endorsement for the study that could be used to help gain cooperation at individual installations, we prepared a briefing for Mr. John P. McLaurin, III, Deputy Assistant Secretary of the Army, Military Personnel Management and Equal Opportunity Policy. We had hoped Mr. McLaurin would endorse the study and thereby increase the probability of cooperation from installation commanders.

On February 27, 1997, the principal investigator, the study coordinator, and the study's Army consultant Col. Karen Frey (U.S. Army, ret.) met with Mr. McLaurin and his assistant Col. Lee. At that meeting, both Mr. McLaurin and Col. Lee expressed strong concerns about our conducting the study in the immediate future. They stated that the recent number of sexual harassment charges and the resultant sexual harassment investigation was creating a backlash against women in the Army. Senior officers and members of Congress who had previously limited their negative statements about women in the Army because it was not "politically correct" saw the sexual harassment media event as an opportunity to push for reducing women's role in the Army. They were concerned that a study on stressors and negative outcomes from stressors for Army women would elicit information that could be used to fuel the argument that women should not be in the Army. Mr. McLaurin and Col. Lee also expressed other concerns. A concern related to their first was that they thought, minimally, both men and women should be studied so that it could be shown that men as well as women suffer stress and negative outcomes. Another major concern was that we were planning on using the National Guard women as our nonactive-duty group. They felt the Guard was too heterogeneous in training and experience from State to State to allow any generalizable statements to be made about the group as a whole.

We wanted to address Mr. McLaurin's concerns (these are outlined in Appendix A), but we were limited in our ability to do so. We stated that we simply did not have the money to include men in the study sample, although we would see if there were additional funds to do so. Reducing the sample size of women to include men would have severe negative impact on our ability to conduct our analysis of the data and so possibly result in unreliable and invalid results. Reducing the sample size for women to include men also would not cover all of the additional costs of including men in the sample. Including men in the study would involve researching factors related to stress and negative outcomes for Army men, but we had no funds for additional research. It would also involve developing an additional questionnaire, or modifying the woman's questionnaire—which we also had no funds to do. We subsequently did ask our project officer, Patricia Modrow, about possible additional funding and also investigated other potential sources of funds, but we were unable to find additional monies to include men in the study.

We agreed to use women Reservists, rather than National Guard women, as our nonactive-duty sample and obtained permission from our project officer to do so. Finally, there

was no way we could delay our study but we did (1) state that in our report we would stress both the positive as well as the negative factors associated with Army life for women, and discuss both positive adjustment, not just negative outcomes, experienced by Army women; and (2) ask Mr. McLaurin to be a part of the panel to review our findings and make recommendations. Appendix A includes the letter we sent to Mr. McLaurin after our meeting, which also included our response to his various concerns.

This experience was far from the end of the problems we have encountered because of the timing of the study. Installation commanders have been reluctant to allow us to interview women or, in some cases such as at Fort Bragg, have actually refused us access to women. The media attention surrounding the sexual harassment charges, trials, and investigations have made installation commanders wary of any study that might bring additional negative press. Particularly at Fort Bragg, which had also received other negative press, including that surrounding the racially motivated murders, there was a strong sentiment against any potential project that could negatively affect the image of the installation.

Trying to obtain access and having to find substitutes when installations refused to participate have caused us lengthy delays. In our application, we had scheduled the focus groups to be completed by April 1997. However, once the project began it took longer than expected to meet with the appropriate staff at the Department of the Army to seek approval for conducting the focus groups. As a result, we delayed our groups with a target date of June 1997. We then experienced the various delays in gaining access to specific installations and to the populations we needed within those installations. Ultimately, we were successful at setting up the groups and conducted our active-duty focus groups from July through September 1997. One reason for these delays was that we had to substitute Fort Belvoir for Fort Bragg for two of the groups after long, repeated, and unsuccessful attempts to obtain access to Bragg. Although these are not comparable units, we felt for the purposes of the focus groups only, the women at this installation would be able to adequately address the issues about which we needed to obtain information.

Another difficulty we had in obtaining access is that, although our active-duty consultant, Col. Frey, was retired, first our National Guard consultant and later our Reservist consultant, were on active duty and assigned to their liaison role by their unit commander. We were also unable to pay them because of the terms in our contract. Therefore, we were apparently on the bottom of their priority list. We had great difficulty getting in contact with these women—who were often not in the office and would not return our calls—and then did not carry out the tasks we asked of them. We understood that their regular duties kept them very busy, but the lack of cooperation from our Reservist consultant, Major Jean McGinnis, completely stalled our Reservist focus groups for several months because she failed to carry out the tasks we needed her to accomplish despite our phone calls and attempted phone calls with her. In October 1997, we finally gave up on trying to obtain assistance from Major McGinnis and asked Col. Frey if she could (1) work with individuals she knew in the Reserves to obtain the information we needed and (2) contact unit commanders for us. She agreed and has already done much of the preliminary work. We now have scheduled our focus groups with Reservists in early December 1997.

We have serious concerns about our ability to gain access to the installations we had planned on using for the main study data collection. One important installation proposed for main study data collection is Fort Bragg. If we continue to be unable to obtain cooperation from Bragg, the only reasonably comparable installations would be Fort Hood in Texas or Fort Lewis in Washington State. However, our budget included only travel with brief overnight stays by

automobile for staff from our North Carolina office to collect the data at Fort Bragg. Travel to Texas or Washington State would substantially escalate travel time and expenses beyond what is in our budget. Therefore, we are continuing to try to obtain help in obtaining cooperation at Bragg from other sources. We have contacted our project officer about anyone in her office who might be able to help us. General Evelyn Foote (U.S. Army, ret.) has also agreed to try to help us obtain cooperation at Bragg.

2.2 Developing the Focus Group Protocol

The goal of the focus groups was to determine the extent to which the literature on stressors of women, including Army women, fully and accurately reflected the nature of the stressors currently experienced by Army women. Based on the literature findings (see Section 1.0), study team members, including our active-duty Army consultant, discussed the topics that should be included in the focus group protocol. The purpose of the protocol is to guide the focus group leader so that each group covers the major important topics in a similar way. Several topical areas to be included were outlined: job; marriage and family; deployment or possibility of deployment; health; financial (particularly for enlisted); harassment; and traumatic stress (e.g., being under fire or being violently victimized). We also discussed social support and negative outcomes that might result from stress, including drug and alcohol use; mental health problems; illness; marital problems; poor job performance; and intent to leave the Army. These topical areas were divided among several staff members who each developed a draft of the protocol for their topical area. These were then exchanged among staff who offered suggestions and modifications. The revised protocol was then reviewed by our active-duty Army consultant, and subsequent changes were made based on her feedback. The protocol was finalized by the end of April 1997. A copy is included in Appendix B.

2.3 Obtaining Human Subjects' Clearance

The study team developed a human subjects' protocol describing the focus groups, and we appeared before RTI's institutional review board (IRB) on March 18, 1997. Two issues were brought up by the IRB. First, they wanted us to ensure that supervisors and their supervisees were not in the same focus groups to avoid any negative effects on supervisees should they say something their supervisor did not like. Because we were "over-recruiting," that is, inviting more women to participate than we could use if they all showed up, we agreed to randomly dismiss either the supervisor or supervisee if it turned out such a relationship existed among the assembled group. (However, this never occurred.) Second, the committee was concerned that the women who were not actually included in the focus group (for the reason just described or because more women showed up than we needed) did not come in vain. So, we agreed to develop a short questionnaire on the same topics as the focus group discussions that women not participating in the focus groups could fill out and drop in a box in the next room.

RTI's IRB approved both procedures and the consent forms. These were then sent to our project officer for human subjects' approval by the Army, which we obtained. A copy of the questionnaire given to subjects who did not participate is included in Appendix C. A copy of the human subjects' approval form is found in Appendix D.

2.4 Conducting the Focus Groups

We wanted to ensure that our focus groups encompassed a wide range of occupations and ranks in order to learn about stressors and their outcomes across the broad

spectrum of women serving in the Army. We also wanted to ensure that there was no major rank difference within a particular focus group so that individuals would feel free to speak freely. For active-duty women, we decided to do focus groups separately for enlisted (E3-E4); junior noncommissioned officers (NCOs) (E5-E6); senior NCOs (E7-E9); and company grade officers. Because field grade officers are so few and so difficult to recruit for a focus group, we decided to gather information from them via a questionnaire rather than attempt to conduct a focus group. They completed a similar questionnaire to that given to women excused from participating in the focus groups (see Appendix E).

We intended to conduct focus groups with senior NCOs and company grade officers at Fort Bragg, but because we were unable to obtain access to Bragg, we ended up doing them at PERSCOM (Army Personnel Command) and Fort Belvoir, respectively, instead. In summary, we conducted focus groups with enlisted women and company grade (junior) officers at Fort Belvoir; junior NCOs at Fort Eustis; senior NCOs at PERSCOM (originally scheduled for Bragg); and distributed questionnaires to field grade officers through a convenience sample generated by interpersonal contacts. Because the questionnaires were anonymous, we do not know the exact location of assignment for the respondents. Locations for focus groups were chosen based on both the number of women and the variety of occupations represented for a particular rank at the various locations we had to choose from (i.e., locations within driving distance of RTI's DC or North Carolina offices).

We believe that we achieved our goal of having a very heterogeneous sample. Forty-one women actually participated in the focus groups. Another 17 came to the group but filled out a questionnaire instead. Seven senior women officers filled out a questionnaire for a total of 65 women from whom we obtained information. Exhibit 1 provides demographic information for women in the active-duty sample who either participated in, or filled out a questionnaire at, the focus group locations.

Women were recruited through the help of our active-duty Army consultant. She contacted the appropriate personnel at the military bases of interest and secured their permission and cooperation. Each participant was required by their commanders to show up at the focus group location at the appropriate time. Once they arrived, they were informed of the purpose of the focus groups and were told that they had fulfilled their commitment by simply showing up. Anyone not wishing to participate in the group was free to go. Commanders were told that some participants would be excused. No final list of participants was provided for commanders to review.

Each focus group consisted of between 5 and 13 women, and three of the groups consisted of 11 to 13 women. Each group session lasted 2 hours. Two study team members attended with one leading the focus group using the protocol and the other taking notes. The women were very cooperative and seemed very interested in discussing the issues in the topical areas. Very few women declined to participate. A wide range of subjects was discussed by the women, and they seemed to have an easy time identifying and discussing the stressors they experience.

We are just now preparing to conduct the focus groups with the Reserve sample. This is much more difficult because of the small numbers of women found at any particular unit and the lack of heterogeneity in rank and occupation in many units. In mid-December 1997, we will be conducting two focus groups with women Reservists. The groups will be held at Fort Meade and Fort Belvoir, and both will be conducted with junior NCOs. It was also more difficult to schedule these groups because we needed to match their training schedules.

**Exhibit 1: Demographic Characteristics of
Those Attending the Focus Groups***

Age	
Under 30	19
30-39	17
40-49	6
50-59	0
60 or older	0
Race	
White	20
African American	28
Hispanic	2
Asian/Pacific Islander	1
Other	2
Any Children	
Yes	37
No	16
Ages of Children	
Under 12 years of age	34
13 to 17 years of age	12
18 years of age or older	2
Marital Status	
Married or living as married	34
Single	19
Education	
Less than high school graduate	3
High school graduate (or GED)	13
Some college	21
College graduate	13
Some graduate school	0
Graduate degree (M.A., Ph.D., etc.)	1

*This includes focus group participants as well as those filling out questionnaires when too many attendees showed up.

2.5 Summarizing the Findings

At the end of each focus group, one member of the team took the lead on summarizing the notes from the group. The other team member then reviewed it for comment. At the end of all focus groups, one team member summarized and synthesized important findings across focus groups as well as from the questionnaires. This summary is in Appendix F. Some selected findings from the focus groups are as follows:

- The stress of rank and Army hierarchy was a topic of discussion in each group. Higher ranking enlisted soldiers sometimes feel “put in the middle” between their supervisors and their subordinates. Lower ranking soldiers often find the requests by supervisors unrealistic and overly demanding. Working with civilians, who are outside the military structure, was seen as particularly stressful.
- Many women identified sexual harassment in the Military as a regular ongoing struggle but did not list this at the top of their concerns.
- Working with and under other women soldiers can, itself, be stressful. Having to be a “role model” and above reproach was voiced by women in each group as demanding and placing additional burdens on them. Women soldiers seem to have different expectations for relationships with other women soldiers, and this was seen as complicating the way in which they carry out their jobs.
- Child care issues dominated the list of stressors in all focus groups. Issues ranged from costs, finding schedules that accommodated Army work shifts, balancing dual-career families, to separation from children during times of training and deployment.
- There were mixed feelings from the groups as to whether work hours were manageable or overwhelming depending on rank and current assignment.
- Weight maintenance and Army regulations were voiced as stressful for most women and appear to be a source of daily stress.

2.6 Developing the Main Study Questionnaire

Early on in the study, we started reviewing questionnaires related to the topics we would be assessing in our study, such as occupational stressors, family stressors, and sexual harassment. We chose instruments to review based on what we had seen cited in the literature, instruments we had used previously, and instruments used by a colleague at RTI, Dr. Robert M. Bray, who has been doing social surveys of military personnel. We also contacted the Army Research Institute (ARI) and talked with Morris Peterson about instruments that had used to assess these domains, including ones they had been used to assess sexual harassment. (We found the ARI instruments particularly useful on issues unique to the Military, such as chain of command and military occupation issues.) Finally, we contacted Jessica Wolfe, a consultant on our study and a recipient of both a previous and a new grant from the Defense Women’s Health Initiative, and agreed on some instruments we would use in common so that we could compare results for our samples.

A draft questionnaire was then developed based on our review of existing instruments. This draft questionnaire was circulated in the summer of 1997 to study team members and Col. Frey. They returned their comments, and the questionnaire was put aside until the focus groups were completed so that the data from these could be use to inform the further development of the questionnaire. (An outline of the draft questionnaire topics is in Exhibit 2; a copy of the draft questionnaire is in Appendix F.) We are now starting back to work on this questionnaire using feedback from the focus groups and will continue development of the questionnaire over the next few months.

Exhibit 2: Outline of Draft Survey Questionnaire

- A. Your Background
- B. Your Military Experience
- C. Your Support and Stress in Your Job
- D. Other Stressors
 - Gender-Related Experiences
 - Racial/Ethnic Discrimination
 - Stressful Life Events
 - Daily Hassles
 - Traumatic Life Events
- E. Positive and Negative Effects of Your Family and Personal Life
- F. Support from Family and Friends
- G. Outcomes That Can Be Affected by Stress
 - Your Health
 - Your Mental Health
 - Substance Abuse
 - Injuries, Impairment, and Disability
 - Retention and Performance

2.7 Summary of Year 1 Activities

In summary, in Year 1 we

- put together our study team, including consultants;
- developed a focus group protocol and questionnaires to be administered to field grade officers and to those who were recruited for the focus group but who did not participate in the group for some reason;

- obtained permission from installation commanders to conduct focus groups;
- obtained human subjects' clearance for holding focus groups;
- conducted the focus groups with active-duty women and summarized results from each of these focus groups;
- synthesized focus group findings for a summary of findings across active-duty groups;
- scheduled and set up Reservist focus groups;
- collected instruments from previous studies; and
- developed a draft questionnaire for the main study data collection.

Our chief problem in Year 1 was obtaining cooperation. This was in large part the result of the media attention surrounding the sexual harassment charges and sexual harassment investigation. We anticipate continuing problems in this area.

3.0 PLANNED ACTIVITIES FOR YEAR 2

In Year 2, we will undertake the following activities:

- Finish conducting the focus groups with Reservist women and summarizing findings from these.
- Obtain permission from installations to administer questionnaires to active-duty women.
- Obtain permission from unit commanders to administer questionnaires to Reservist women.
- Finalize questionnaire to be administered.
- Develop consent forms for main study questionnaire.
- Obtain human subjects' approval to administer anonymous questionnaires to active-duty and Reservist women.
- Administer questionnaires to 1,600 active-duty and Reservist women.
- Key the data from these 1,600 questionnaires.
- Create computer files from these data.

We have several challenges facing us in Year 2. The first is the continuing problem of access, particularly to Fort Bragg. We are continuing to work on this. The second is related to the Reservist sample. We had originally proposed equal numbers of active-duty and Reservist women. However, we are finding that, in general, the Reservist units have so few women that obtaining such a large sample may involve contacting, setting up logistics for, and then administering the interview to women at many more locations than originally planned. For active-duty units, we still hope to go to between 5 and 10 locations. A large Reservist sample may require going to 4 to 8 times that number of locations. Setting up times to do the interviews with Reservists is also problematic because we have to coordinate with the units' training period. We are considering reducing the size of the Reservist sample for these reasons. We would then increase the size of the active-duty sample. We believe that this would still enable us to address Reservist issues while keeping within our budget.

APPENDIX B
YEAR 2 ANNUAL REPORT

THE NATURE AND OUTCOMES FOR WOMEN OF STRESSORS ASSOCIATED WITH MILITARY LIFE

YEAR 2 ANNUAL REPORT

1.0 INTRODUCTION

This study examines (1) what are the stressors that most negatively impact Army women; (2) what factors ameliorate the effects of negative stressors; (3) what are the negative outcomes that result from stressors? A full review of the literature in this area may be found in the original proposal or the Year 1 report. In Year 1 we conducted focus groups to expand our knowledge of stressors of Army women and finalized the draft questionnaire. We are currently in the data collection phase of the study.

1.1 Information Needed to Better Understand the Nature and Effects of Stressors on Women in the Military

Much has still to be learned about stressors of women in the military in general and in the Army and the Reserve specifically. Although stressors of military women have been found to be similar to the stressors of other women, and although negative outcomes related to stress appear to be similar for both populations, the information currently available is insufficient to develop effective intervention and prevention programs.

First, we need data on stressors and outcomes on a broader sample of women in the Army and Reserve. Previous studies have been focused particularly on nurses and small groups of other women such as military police units. These data do not represent the wide variety of occupations of Army and ARNG women. We particularly need more information on The Army Reserve. We have found no studies to date on stressors of these women.

Second, we need more detailed information on the stressors themselves--it is insufficient to say that "working in a predominately male environment" is a stressor. What are the specific factors that make these roles stressful and why are they less stressful in some units than in others?

Third, we need more information about the relative importance of different types of stressors and how stressors relate to socio-demographic characteristics, occupation, etc. Prevention and intervention programs can then be targeted for particular groups of women. For example, the most serious stressors for unmarried junior enlisted personnel may be different than those for older married women officers. The most important stressors of nurses are likely to be different from the most important stressors of combat support personnel.

Fourth, and similarly, we need to better understand those factors that mediate stressors. For example, how does social support influence whether a particular type of stressor impacts negatively one woman and not another with similar demographic characteristics? What organizational structures and programs might be changed or developed to help women in the Army and Reserve access and use buffers such as social support more effectively?

The proposed study will address these issues. We propose to examine:

1. What are some of the most important stressors of women in the Army and Army Reserve and what is relative importance of the various stressors? We need information about war zone and non-war zone stressors, both acute and chronic stressors, and stressors of women in the myriad roles they now occupy in the Army.
2. What are the negative outcomes that are the result of stress and how is exposure related to outcome? We need information on the relationship between stressors and diverse serious outcomes: health consequences, mental health consequences, substance abuse and dependence, and job performance and retention.
3. How do mediating variables impact the relationship between stressors and outcomes? For example, how do socio-demographic characteristics, such as age and rank, mediate the effects of stressor exposure on outcome? What potential buffers--such as support from supervisor--are most effective at reducing negative outcomes?
4. What characteristics of the unit are associated with negative outcomes?

The proposed study will provide data never available before---data that Army decisionmakers and planners can use to develop mechanisms, such as prevention and intervention programs, to reduce stressors and their impact on Army women.

1.2 Hypotheses/Purpose

Our purpose is to:

- (a) identify the most important stressors and their outcomes among women in the Army and Army Reserve;
- (b) describe the relationship between stressors and risk factors, including mediating factors such as socio-demographics and buffering agents; and,
- (c) make recommendations about prevention strategies that might be employed to reduce stressors and their impact.

Our general hypotheses are that:

- exposure to stressors is associated with poorer outcomes, including subsequent health and mental health status, substance abuse, and occupational functioning;
- some exposures (e.g., exposure to enemy fire) are more pathogenic than others (e.g., exposure to extreme living conditions); and,
- socio-demographic and other characteristics mediate the effect of stressors on outcomes.

Our specific hypotheses for the study are based on findings from the literature to date. These include:

- Women in occupations that present more physical danger and more serious daily hassles, such as combat support and military police, will report more stress and have more negative outcomes than women in other occupations.
- Women in units likely to be deployed first will report more stress but will have significantly higher negative outcomes only if deployment has occurred recently or is likely to occur soon.
- Women with children in the home will report more stress than women with no children; single mothers will report more stress than married mothers; women with younger children will report more stress than women with older children.
- Women in units that are predominately male (e.g., 80% or more) will report more stress and have more negative outcomes than other women.
- Women in their first year of enlistment will report more stress than other women. Older women will report more stress than younger women other than first term women. Both first term and older women will have more negative outcomes than other women.
- Women with less education will report more stress and have more negative outcomes than more educated women.
- Women who have served in a war zone or similar hostile situation where they were subject to threats to their lives will have more negative outcomes than other women, controlling on age and education.
- The greatest sources of stress will be: being a parent of young children; being in a predominately male unit; being in a unit where the males have a strong negative attitude toward women serving in their unit; and age.
- Mediating variables will include socio-demographics (age, education), support of supervisor, support of male colleagues, and finding the job rewarding.
- Negative outcomes associated with stressors will include more use of health services, more sick time, more reported health problems, more psychological distress, more use of alcohol, and less commitment to staying in the military. In general, other performance measures are not expected to be significantly related to stress.

We will examine these hypotheses in a multivariate framework, so that we can assess the long-term, independent effects of a variety of military stressors while controlling for potentially predisposing characteristics of the individual.

The conceptualization that will guide our analyses is the model in Figure 2. This is consistent with Lazarus and Folkman (1984) and their colleagues who have advanced the position that the patterns of adjustment after stress exposure differ because they are influenced by the variance in characteristics of both stressors and the affected individual.

The data from this study will enable us to assess the distribution of stress exposure across women in the major occupational specialties and different deployment statuses that women hold in the Army and Reserve today. Although descriptive, this information is critical for thinking about potential preventive efforts. Within the scope of this study we will not be able to collect data on a representative sample of women in the Army and Reserve, and therefore cannot provide prevalence estimates of stressors and outcomes of women in these two services. Nonetheless there is much we can contribute to the knowledge about stressors of women in the military.

The final report will include information that will provide data on a broader array of women, stressors, occupations, and outcomes than has ever before been gathered. These data, therefore, will provide a better portrait of the most important stressors of women in these branches of the military, particularly women in the most common occupational specialties. Second, the collected data will allow the examination of the relationship between stressors and outcomes, and to determine what variables mediate these relationships. Thus, the data from this study will enable us to examine the more immediate health, mental health, and performance consequences of the kinds of stress to which women in the Army are routinely exposed.

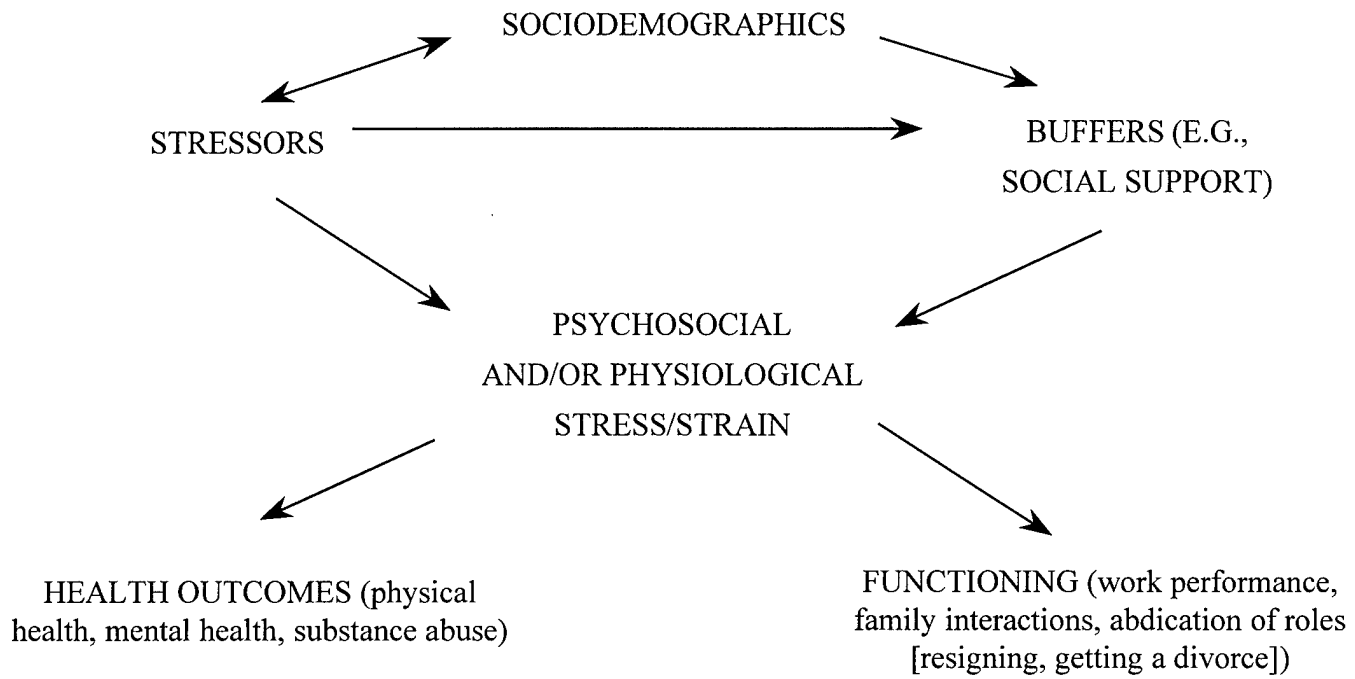
In our primary data collection, we will over sample units that contain individuals who have served in a war zone or in regions in which soldiers were at risk of being injured or killed by enemy fire, such as Somalia. If we are able to obtain enough such respondents, we can examine models of traumatic stressors on outcomes.

Because of the very limited previous research on stressors of women in the military, at least a portion of the proposed analyses may be best described as "informed exploration." We believe, however, that an exploratory approach is appropriate given the state of current knowledge about the impact of stressors on women soldiers; we also believe that the risk of spurious findings is reduced by the use of a specific conceptual model to drive the analyses.

1.3 Technical Objectives

Our technical objective is to identify experiences and conditions that are the most stressful to women in the Army and Reserve and that have the most frequent and/or most serious negative outcomes for the women and the Army. This object will be accomplished by:

Figure 2



- conducting focus groups and self-report questionnaires to collect data on major stressors and outcomes from women currently on active duty in the Army (completed in Year 1); and,
- examining newly collected data to determine: a) the nature, likelihood, and outcomes associated with various types of stressors for women currently in the Army, and b) the mediating effects of socio-demographic characteristics of the individual, the women's occupation and family, the environment, and other factors may have on outcomes.

1.4 Accomplishments in Year 1

The accomplishments in Year 1 are fully described in the Year 1 report, which may be found in Appendix B. In summary, in Year 1 we:

- finalized the study design, including changing our study groups from the active duty Army and the Army Reserve National Guard (ARNG) to the active duty Army and the Army Reserve;
- spent a lot of time and effort attempting to contact and obtain cooperation from active duty Army and Army Reserve officials in order to obtain permission to use Army active duty and Reserve women as subjects in our study;
- began our efforts to line up sites at which to conduct the data collection;
- conducted focus groups with Army women to supplement the literature on the nature of stressors of Army women;
- developed a draft questionnaire for the full survey; and
- developed the sampling frame for the study.

2.0 YEAR 2 ACTIVITIES

A number of important activities were completed during the second year of this study. Focus groups with women Reservists were completed (focus groups with active duty women were completed in Year 1), as well as a final focus group report. Major accomplishments of project staff included gaining permission from commanders to allow us access to women soldiers, successfully recruiting sites for focus group and questionnaire administrations, data collection for 419 Women Reservists, and the initial development of the data management system.

The Year 1 Annual Report documented difficulties we encountered in obtaining cooperation from military sites to gain access to women soldiers. At that time continuing problems with site recruitment and cooperation for questionnaire administration were anticipated for Year 2. However, project staff have persevered in their efforts and have been able to accomplish most of the activities and goals planned for Year 2. The remainder of these tasks will be carried out in Year 3.

2.1 Focus Groups

During Year 2, we completed focus group activities, with active duty women that had begun in Year 1. Two focus groups with women Reservists in Maryland and Virginia were conducted. A written summary of the four active duty Army focus groups may be found in Appendix A. Verbal briefings were provided to project staff members on findings that came out of the two Army Reserve focus groups.

The results of the focus groups were used to inform the development and formulation of the survey questionnaire that was in draft form at the beginning of Year 2. Key issues were identified from the focus groups that were not addressed in the items in the draft questionnaire. An example of these issues includes stress caused by Physical Training (PT), stress caused by struggling to meet Army weight standards, and stress caused by working with civilian colleagues. Discussion of the inclusion of additional questionnaire items to address these issues will be found in Section 2.4.

2.2 Preliminary Short Questionnaire

Responding to our Army consultant's observation that we would find it almost impossible to recruit senior non-commissioned officers for focus group research, we developed a short questionnaire (see Appendix C) similar to the focus group moderator guide. Project staff examined the results of the short questionnaires, in conjunction with the results from the focus group findings to inform the development of the survey instrument. The results of the short questionnaire used for senior non-commissioned officers can be found in Appendix D.

2.3 Cooperation and Access

One goal during Year 2 was to contact reservist and active duty Commanders at strategically chosen locations in order to solicit their support for the administration of our questionnaire to women in their units. Some senior Army staff continued to have reservations about giving us access to women to complete our survey. It appeared that this was at least in part, the result of the negative press the Army was receiving about allegations of sexual harassment in the military. Senior officers were concerned about anything "negative" that might result from our study. Therefore, our Army consultant recommended early in Year 2 that we postpone recruitment of units in the active duty component until some of the media attention subsided. She recommended that instead we first focus our efforts on the Army Reserve during Year 2. This served our aims well. First, overall, the senior staff in the Reserve seemed to have more interest in our study than active duty Army staff because the Army Reserve tend to be "understudied" compared to the active duty component. Nonetheless, our experience in gaining cooperation and recruiting with the Army Reserve allowed us to improve on our recruitment strategies for the active duty Army. Second, it appeared that, as predicted by our consultant, officials in the Army became more cooperative as

the negative press over sexual harassment issues subsided and so were more willing to grant us access to women as time passed.

Early in Year 2, project staff began recruitment procedures for the Army Reserve only, postponing recruitment of the Army personnel until the summer of 1998. In the first months of 1998, we contacted an individual at US Army Reserve Command (USARC) to help us gain support of officials in Reserve Support Commands (RSCs) in locations across the East Coast. We began by identifying the RSCs on the East Coast that contained Units with a large proportion of women in our targeted population. We were interested in recruiting women who were representative of the national population of women Reservists in terms of race, rank, and marital status. We also wanted a high proportion of women 1) in the most common occupations and 2) who would be subject to rapid deployment. Therefore, we wanted to ensure that we had sufficient numbers of women whose occupations were defined as operational and whose Military Occupational Specialties (MOSs) fell under the categories of Administration, Medical, Signal, and Supply. We obtained data from US Army Reserve Command on the concentrations of women across the United States and, with guidance from our Army consultant, we were able to select the following RSCs as those from which we would draw Units: Oakdale, PA, New York, NY, and Birmingham, AL.

Soon after selecting the sites that satisfied our selection criteria, project staff members began developing strategies to recruit female Reservists. The initial step consisted of an official memo sent by our USARC contact to each of the selected RSCs. This memo served to introduce the study, and requested names of unit-level commanders that might be contacted by the RTI Project staff. These unit-level contacts would assist with site visit logistics, and provide demographic and descriptive information on unit members. We then made initial contacts with the unit officials via phone.

In the early stages of planning for recruitment, our Army consultant informed us that it might be problematic to get Commanders to allow women to participate on drill weekends. Furthermore, most Army Reserve units only had small numbers of women soldiers so if we went to individual units, data collection would require going to a large number of sites to reach our target of 800 women Reservists. Therefore, our Army consultant obtained approval from an official at the Pentagon's Office of the Chief of the Army Reserve (OCAR) for Additional Drill Assemblies (ADAs). This arrangement would entitle 800 women Reservists to receive an additional half-day of pay for their participation in a survey administration on a weekend day that was not their scheduled drill weekend. It was presumed that the use of the ADAs would be less disruptive to unit activities, increase participation rates, and as well as increase the number of subjects from whom we could collect data at one administration.

Project staff anticipated the administration of the surveys at strategically chosen RSCs that would result in higher participation rates since it was thought that:

- 1) there was a higher concentration of reservists located near the RSCs, and
- 2) the RSCs were better equipped to accommodate survey administration of between 100 and 200 women at a time.

It soon became apparent that ADAs were perceived to be an administrative hassle by Army Reserve officials. Our contacts at the chosen RSCs expressed their concerns about the amount of paperwork that the ADAs would create for them. Many of them noted that to get enough women to gather on a non-drill weekend would require some women to travel from over an hour away twice in one month---once for the survey, once for their scheduled drill. After three months of negotiations to recruit women Reservists, the issue of ADAs became moot when the officials in the Army Reserve withdrew their offer to pay soldiers to travel to our data collection sites.

Discontinuing the attempt to utilize the ADAs was seen as positive by many in the RSCs. However, we still were faced with many roadblocks and difficulties in identifying and recruiting units that would cooperate with the study within our time frame. It now became clear that we would have to go to many more sites to collect data than originally planned. This was now late spring and many units were about to begin their Active Duty Training (AT) and so were unable or unwilling for us to convene relatively large groups of their female military personnel on their annual two week training session. Also, many soldiers identified to be liaisons evidently became tired of dealing with this issue, and so became less and less available by phone, fax, or e-mail. In some instances, we had to elicit the direct assistance of both our Army consultant and our liaison at USARC to intervene and persuade the designated unit contacts to respond to our continued requests and needs. Thus, as a result of previous delays stemming from the opposition to the use of ADAs and the subsequent difficulties in getting units to respond expediently, we began data collection in July and August instead of our target of April and May.

After this period of difficulty, attributable to lack of sponsorship at the Army level, things began to improve. When we were finally able to establish direct communication via phone with the designated unit contacts, some of them assigned a different person to handle the logistics of arranging a site visit to their location. In general, these newly assigned staff were more responsive than those we had been dealing with previously. Thus, the coordination and recruitment process picked up momentum and Army Reserve staff, as well as civilian staff at some sites, began to collaborate with RTI staff and facilitate the logistical arrangements for our questionnaire administration more effectively.

2.4 Final Questionnaire

During Year 2, we modified the first draft of the core questionnaire. Using the results from the focus group analysis, we identified topical gaps in our instrument that is, we found that some issues that were raised consistently in our focus groups that were not adequately addressed through the item pool in our questionnaire. In order to fill such gaps, we developed additional questions and inserted them in appropriate locations. We also spent time formatting our instrument so that it would be more user friendly and less prone to subjects making inadvertent errors. In this stage we also shortened several sections of the questionnaire in order to keep the length at no more than one hour.

After the second draft of the questionnaire was completed, we recruited women to pretest our instrument. We offered a \$25 incentive to women who were in or had previously been in either the Army or the Army Reserve and who would complete our draft instrument and provide comments. Our method for recruitment included word of mouth and sending an e-mail to the staff members of a large research unit at RTI to request volunteers. In addition, the e-mail included mention of appreciation to staff notifying female friends or family who were past or present military personnel and who might be willing to participate.

Three volunteers completed the pretest, two RTI employees and a friend of an RTI employee. The pretest took two hours---one hour to complete the survey, and one hour for a member of the project team to get feedback from the pretest volunteers regarding difficulties with, and ways to improve the questionnaire. Completion of the survey instrument at pre-test did not exceed one hour and ten minutes. We also asked the volunteers to comment on the content and appropriateness of the individual items as well as the question and topic flow.

The volunteers provided information immediately after completing the questionnaire. A member of our project team conducted the pretest debriefing. Subsequent to all three pretests, verbal summaries of the debriefings were given to the project team. In addition, comments from a review of the instrument by our Army consultant and all project staff were pooled and considered during the final phase of questionnaire revision. Minor changes were made to the questionnaire based on these comments before the final version was complete.

A second version of the questionnaire was created and modified slightly so that a few questions, which had been previously designed to refer only to the active duty Army, were changed to refer to the Army Reserve. This became the Army Reserve questionnaire and was used throughout Year 2 to collect data from US Army Reserve women. (See Appendix E for Final Questionnaire.)

2.5 Consent Forms and Other Materials

In Year 2, we developed supporting materials that would be distributed during the administration of the survey. We first designed an information sheet for Commanders that introduced the study, and provided general information on the issue areas addressed in the questionnaire, what would be required of the women. The information sheet also included the names of researchers at RTI whom Commanders could contact if they had additional concerns or questions (see Appendix F). We developed a list of Frequently Asked Questions (FAQs) similar to the previously described information sheet (see Appendix G). The FAQs were used at the beginning of each questionnaire administration session. The women were instructed to read the FAQs as the information was relayed verbally by the proctor. Then the women were asked to keep the FAQs, which contained contact information, in the event that they had questions or concerns about the study or their rights as study participants.

2.6 Human Subjects Review

All developed materials were sent for review to RTI's Internal Review Board (IRB). The review ensured that all research being conducted by RTI on human subjects passes a battery of stringent requirements designed to meet the ethical treatment of all human research participants as well as federal human subjects guidelines. Any concerns or clarifications that the IRB required were addressed and revisions to the instrument and materials were made. A copy of the IRB approval is included in Appendix I.

2.7 Questionnaire Administration to Women Reservists

In July 1998, we began administering surveys to women Reservists. As we have previously noted, no recruitment was done in Year 2 for the 800 active duty Army women. See Chapter 3.0 for the time line for completion of this activity.

Survey administration required that two female project staff travel to each data collection site to proctor the session. As women Reservists entered the administration room, they were directed to sit only in the chairs that had a FAQ and a pencil on the table in front of them. At those sites where space and equipment permitted, chairs were arranged so that there was one empty seat between the women participants to ensure confidentiality.

Project team members created a proctor guide that provided specific instructions for preparing and conducting the data collection visit. The proctor described the study and what would be asked of respondents, and explained that the study was anonymous and how long it would take to complete the questionnaire. The proctor then asked for questions, explained that participation was voluntary, and that

anyone who chose to was free to leave at any time during survey administration. In all of the completed administrations, only one woman left without complete the questionnaire. Women were also instructed that they should leave when they had completed the questionnaire and drop their questionnaires in a box on the way out. Table 2.1 shows our progress in Year 2 for numbers of women who have successfully completed our questionnaire.

Table 2.1 Year 2 Progress for Army Reservists

Reservists State	Administration No.	RSC	Completion
PA	01	99 th	41
PA	02	99 th	70
DC	03	99 th	120
NY	04	77 th	102
AL	05	81 st & 87 th	86
TOTAL			419

Completion of the survey instrument ranged from 40 to 90 minutes, and overall questionnaire administration averaged one hour.

2.8 Data Management

Because of delays getting recruitment and access to units and women, we did not key any data in Year 2. Please see the timeline in Chapter 3 for the projected completion date of this activity. During Year 2, however, project staff started outlining the data entry procedures. We held several project meetings at which we developed procedures for data receipt, data edit, keying and decided on the format for the data files. In addition, we assessed the feasibility of utilizing data entry software that would enable the questionnaires to be automatically scanned into a database instead of being keyed. We determined that this process would be too costly for a survey of only 1,600 respondents.

2.9 Summary

In Year 2:

1. we completed all focus groups and a focus group report;
2. we modified the draft questionnaire based on feedback from the focus groups and finalized this questionnaire;
3. we obtained cooperation from senior staff in the Reserve and recruited sites for Reservist data collection;
4. we collected data on 419 Women Reservists at several sites; and
5. we began our efforts to obtain cooperation from senior staff in the Army active duty component;
6. we began to develop the data management tools.

3.0 YEAR 3

In Year 3, we will complete the data collection and start on the next phase of the project, the data analysis. See Exhibit A which provides a timeline for these tasks.

3.1 Activities Planned For Year 3

Unlike the problems faced during years 1 and 2, the project staff does not anticipate major obstacles during year 3 (1998-99). At the time of this report active duty commanders had already been contacted and their level of cooperation overall has been very good. The active component has opted to task study planning and execution through operational channels, which has greatly facilitated support and responsiveness.

In year 3 we will complete the following activities:

- Continue to seek permission from reserve unit commanders to administer questionnaires to women Reservists in order to complete our goal of 800 reservist interviews. Proceed with the planning and completion of site visits until all reservists interviews are completed;
- Modify the wording of the questionnaire for administration to active duty women;

EXHIBIT A: SCHEDULE FOR COMPLETION OF ACTIVITIES

	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Obtain permission for installations to administer questionnaire for remaining reservists												
Complete data collection for reservists												
Edit questionnaire for administration to active duty												
Obtain permission from unit commanders to administer questionnaire to active duty women												
Initiate complete all data collection for active duty women												
Edit, copy, and key questionnaire data												
Create computer files from these data												
Analyze data collected from the reservist and active												

- Establish contacts with US Army Medical Command (MEDCOM), US Army Forces Command (FORSCOM), and the Military District of Washington (MDW) and coordinate with installation commanders to administer questionnaires to active duty women.
- Plan and complete approximately 10 visits for data collection from active duty women, completing 800 interviews with active duty women;
- Edit, code, key and create computer files from the data collected from both the Army Reserve and active duty women;
- Analyze data collected from the Army Reserve and active duty women;

3.2 PROBLEMS ANTICIPATED IN YEAR 3

We anticipate that we may have to travel to many more Army Reserve units than originally planned because the number of women at each unit has been smaller than we expected. In order to obtain the distribution of MOSs we are seeking for active duty women, we may also have to travel to more distant locations than planned. We think we can nonetheless keep our costs within our budget.

We do not anticipate further problems with poor cooperation from commanders because of media attention to sexual harassment allegations. Cooperation from commanders contacted recently has been relatively good. We will have to continue in Year 3 to carry out data collection tasks originally projected for Year 2. This means we will not complete data analysis for our final report in Year 3 and will be asking for a no-cost extension for a fourth year to complete these tasks.

REFERENCES

1. Lazarus R, Folkman S. *Stress, Appraisal, and Coping*. New York: Springer, 1984.

APPENDIX C
WALTER REED ARMY MEDICAL CENTER
DEPARTMENT OF CLINICAL INVESTIGATIONS
REVIEW DOCUMENT

APPLICATION FOR CLINICAL INVESTIGATION PROJECT

1. **PROJECT TITLE:** Survey of Stressors and Their Impacts on Women in the Army and Army Reserves

2. **WRAMC PRINCIPAL INVESTIGATOR:**

Dr. Charles C. Engel, Jr.
Gulf War Health Center
Building 2, Ward 64
Walter Reed Army Medical Center
6900 Georgia Avenue
Washington, DC, 20307
Phone: 202-782-8064
Fax: 202-782-3539
E-mail: cengel@pobox.com

3. **RTI PRINCIPAL INVESTIGATOR:**

Dr. B. Kathleen Jordan
Research Triangle Institute
Health and Social Policy Division
3040 Cornwallis Road
Research Triangle Park, NC 27709-2194
Phone: 800-334-8571, extension 6410
Fax: 919-541-7384
E-mail: bkjoh@rti.org

4. **COLLABORATING PERSONNEL:**

Diana Sierra
Research Triangle Institute
Health and Social Policy Division
3040 Cornwallis Road
Research Triangle Park, NC 27709-2194
Phone: 800-334-8571, extension 6436
Fax: 919-541-7384
E-mail: sierra@rti.org

Jessica Nelson
Research Triangle Institute
Health and Social Policy Division
3040 Cornwallis Road
Research Triangle Park, NC 27709-2194
Phone: 800-334-8571, extension 6772
Fax: 919-541-7384
E-mail: jpn@rti.org

Nancy Hampton
Research Triangle Institute – DC Office
Health and Social Policy Division
1615 M Street NW, Suite 740
Washington, DC 20036-3209
Phone: 202-728-2082
Fax: 202-728-2095
E-mail: nhampton@rti.org

5. MEDICAL MONITOR: NA.

6. OBJECTIVES:

Our purpose is to:

- a) identify the most important stressors and their outcomes among women in the Army and Army Reserves;
- b) describe the relationship between stressors and risk factors, including mediating factors such as socio-demographics and buffering agents; and,
- c) make recommendations about prevention strategies that might be employed to reduce stressors and their impact.

Our general hypotheses are that (1) exposure to stressors is associated with poorer outcomes, including subsequent health and mental health status, substance abuse, and occupational functioning; (2) some exposures (e.g., exposure to enemy fire) are more pathogenic than others (e.g., exposure to extreme living conditions); and (3) socio-demographic and other characteristics mediate the effect of stressors on outcomes. We will examine these hypotheses in a multivariate framework, so that we can assess the long-term, independent effects of a variety of military stressors while controlling for potentially predisposing characteristics of the individual.

7. MEDICAL APPLICATION:

RTI will make recommendations to the Army about how to reduce stress and its effects and improve morale and performance for active duty and Reserve Army women.

8. BACKGROUND AND SIGNIFICANCE:

Women in the military are more numerous, more heterogeneous, and fill a much broader range of occupations than ever before. Many are now subject to the same kinds of environmental, occupational, and combat stressors faced by men. Women may, in fact, be subject to more or greater stress than men since women may suffer sexual discrimination and harassment in a predominately male environment; must "make do" with equipment and procedures not designed for women; and, of course, are more likely to have primary responsibility for children in addition to their military duties. Further, as the military decreases its size, it must rely more on the reserves and national guard to respond to military crises. We know even less about the characteristics and stressors of non-active duty women.

Stress associated with Army life can have myriad negative effects for the military's functioning. These effects include:

- attrition;
- sick time;
- medical treatment costs for substance abuse, health and mental health problems;
- reduced job effectiveness (soldiers may be more prone to make errors)
- lower morale; and
- increased conflict.

Identifying the major stressors that significantly affect women can enable military decision-makers to take actions to reduce these negative effects and allow women to function at their maximum capacity. At present, however, information on the nature of stressors that now affect military women, and the outcomes associated with these stressors, is very limited.

The need for research in this area has been recognized by both the Institute of Medicine and the writers of the Broad Agency Announcement (BAA) for Defense Women Health Research (DWHR). In its report, Recommendations for Research on the Health of Military Women, the Institute of Medicine noted that there was need of research on "major factors affecting the health and work performance of military women", including women's physiological, psychological, and behavior responses to operational stressors such as "extreme ambient temperature, intense physical activity, trauma, fatigue, and restrictive clothing." The BAA for DWHR notes that two areas of particular research interest are (1) environmental stressors relating to operational effectiveness for mission accomplishment"; and (2) "psychological health and well-being."

The proposed project targets these objectives. The specific aims of this project are to examine (a) the stressors experienced by both active duty and non-active duty women, and (b) the relationship of these stressors to occupational and interpersonal functioning, and to problems with substance abuse, mental and physical health. We will give particular attention to the effect of stressors related to deployment and to the activation of non-active duty service women. Our final report will contain recommendations that can be used by military personnel to develop programs for reducing stressors and their effects on military women so that their effectiveness may be increased and their physical, mental health and substance abuse problems may be reduced. In addition, we will develop a questionnaire that can be used by the military to assess and compare the level of stressors to which women are subject in different units, occupations, ranks, and locations.

Background

Over the past two decades, the relationship between exposure to stressors and task performance, physical health, and mental health has been extensively examined. Although it is widely recognized that stressors are prevalent in our everyday lives and can never be fully avoided, researchers are particularly interested in understanding: (a) characteristics of individuals; (b) aspects of stressful events and conditions; and (c) other characteristics of the situation that result in either acute and/or long-term negative psychological and physical responses.

A number of conceptual definitions of stress have been put forth in the literature (1,2,3,4,5), yet the field of stress research suffers from the lack of a clear operational definition of the construct (6,7,8,9). Historically, stress research has focused on exposure to events or conditions (primarily noxious) and the outcomes that result from such exposure. Consequently, there has sometimes been confusion regarding the exact referent of the term "stress": is it the stressor or the response to the stressor? In this project, we adopt the approach used by Lazarus and Folkman (10). We refer to the noxious stimuli or environmental demands that are presented to individuals as the "stressors" or "stressful event". We reserve the term "stress" to refer to "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (10). We refer to the short-term and long-term sequelae of exposure to stressors as "outcomes" or "stress-related outcomes."

Classifying Stressors

Because there are myriad stressors that impact on people's lives, it is necessary to group them in ways that will facilitate our understanding of them. One way of examining stressors is by juxtaposing "life event" stressors versus "daily hassles." We shall refer to this as the "**frequency/ordinariness**" distinction or classification. Research on life event stressors gained popularity with the development of life event scales by Holmes and Raye (11) in the mid-1960s. Life events include experiences that happen relatively infrequently to most people and which tend to produce serious changes in our everyday lives. Examples include marriage, divorce, and changing jobs, moving, or having a child. Initially, life event stressors were thought to have much more serious impacts on our lives than the more common stressors we encounter each day.

"Daily hassles" are the frequent but relatively ordinary stressors of everyday life such as a long commute to work with heavy traffic or having to repeatedly redo certain tasks because of equipment

failures. Research on daily hassles became prominent with Kanner's (12) work on this subject in the early 1980s.

Figure 1. Stressors Classified by Level and Severity

	Level of Severity			
	Mild	Moderate	Severe	Traumatic
Daily Hassles				
Life Event Stressors				

Yet, another way of studying stressors is to group them by their **severity/intensity** (e.g., mild, moderate, severe, and traumatic) (12, 13). Severity may be seen as a continuum which crosscuts the previous classification of stressors (by frequency/ordinariness) (See Figure 1.) One can assess severity using either objective or subjective criteria. The life event stressor literature originally focused heavily on objective criteria for classification of severity (e.g., divorce, changing jobs, or having a child were all considered to be innately important stressors). The traumatic stress field still relies primarily on objective criteria for deciding whether the stressor is traumatic, and there are some empirical reasons for using objective criteria: even when an individual does not "rate" a life event or traumatic stressor as being subjectively severe, the experience of such a stressor may nonetheless be significantly related to outcomes (14). In research on stressors other than traumatic stressors, however, there has been a movement toward subjective assessment of severity (15,16,17).

To illustrate how specific types of stressors fit into the framework in Figure 1, the second row of the table might include: a move by a young single person with limited possessions from one apartment to another of similar quality close by with about the same rent because it was on the second floor rather than on the third (Column 1, mild). The column labeled "moderate" in the second row might include as an example a promotion with a raise and increased responsibility. A life stressor rated as severe might be getting married for the first time at age 38 to someone with custody of four children who lives in another city requiring you to relocate and find a new job. A traumatic life event stressor for the table might be being raped by a stranger in your apartment parking lot.

Yet another way of classifying stressors is by their **source**, that is, the life domain in which the stressor operates or from which the stressor stems (e.g., work, home). Sources most commonly examined include stressors associated with job, with marriage, and with being a parent (18,19,20,21). Other domains/sources of stressors would include: other family members or friends (e.g., a meddling mother-in-law or a dying friend); the environment (e.g., living in a neighborhood plagued by gangs and drugs); and health (e.g., having a debilitating disease). Sources of stressors may be seen to crosscut the other two categorizations illustrated in Figure 1. That is, within all of the cells in Figure 1, the stressors may be classified as stemming from a source type. Cell 1, mild daily hassles, for example, may contain stressors associated with work, with parental responsibilities, etc.

Finally, much research in stress classifies stressors by **general characteristics** such as overload, inter- or intra-role conflict, and lack of control (19,22,23,21). Categorizing stressors in this way allows the researcher to examine stressors at a "higher level;" for example, overload may be associated with work, with parental responsibilities, with marital responsibilities, or with the interface of responsibilities of work and being a parent. One can thus draw conclusions about stressors based on their general characteristics rather than the specifics of a particular stressor.

Stressors by "Frequency/Ordinariness"

Daily Hassles

Kanner (12) has defined daily hassles as "irritating, frustrating, distressing demands that to some degree characterize everyday transaction with the environment" (p. 3). Recent research suggests that daily hassles may have more negative outcomes than stressful life events such as divorce or job change. Research has found that women tend to report more daily hassles than men (17) and to feel greater stress from them.

Life Event Stressors

A significant body of research has been devoted to defining and examining the impact of major life events on functioning (24). Stressful life events happen to many people at some time in their lives. Early studies that focused on stressful life events were strongly influenced by the seminal work of Holmes and Rahe (11) who created a ratio-scaled schedule of 43 broad-spectrum recent life events that were believed to require some psychological adjustment on the part of the person. Research suggests that "positive" life events, such as marriage or promotion, may also require adjustment and so may induce stress. There have been conflicting findings as to whether men or women report more stressful life events.

Stressors by Severity/Intensity

Although there is certain fuzziness to "rating" a stressor on a continuum from mild to traumatic, certain criteria must be met in order for a stressor to be defined as "traumatic" according to psychiatric nosology. A traumatic stressor (also sometimes referred to as an "extreme event") is defined by the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (25) as one that is "outside the range of usual human experience and would be markedly distressing to almost anyone." Some of the most frequently discussed traumatic stressors are those associated with war. Other extreme events include fires, serious accidents, being the victim of violent assault, and natural disasters.

Stressors by Source

We consider here stressors related to occupation, family, environment, and to being a woman in a man's occupation.

Occupational Stressors

Occupational stressors can generally be described as objectively or subjectively defined. Objectively defined stressors that have been studied include physical properties of the working environment (e.g., physical hazards, noise), time variables (e.g. such as length of work day, shift work), social and organizational properties of work and its setting (e.g., work load and monotony), and changes in job (e.g., demotion and transfer). Subjectively defined stressors that have been examined include role-related stress (e.g., degree of control over work processes, responsibility for people), relationship to co-workers, support from superiors, and under-utilization of abilities (26). For those in the military, environmental and occupational stressors may be inextricably entwined. Harsh living conditions, exhausting physical demands, and other highly stressful situations experienced when deployed in certain locations are obviously both environmental and occupational.

Family Related Stressors

Although both men and women may experience stressors related to being a spouse and a parent, women often are affected disproportionately because they remain the primary caregivers for most children and often have primary responsibility for household tasks, even when they work outside the home. Women in the workforce with children experience the stress of attempting to balance the responsibilities of the family with the responsibilities of work--a particularly difficult task for women in the military since they may be assigned or deployed to locations to which they will not be able to take their children. It is not surprising then, that women are more likely to report stressors related to children and marriage than men (18,19,20,21).

Environmental Stressors

Environmental stressors have been studied in an effort to determine their relationship to functional outcomes. For example, a good deal of literature has focused on describing how living conditions affect the functioning of individuals. Researchers have examined such aspects of the environment as

predictability, crowding, and extremes of climate to determine what aspects of the environment are more stress inducing, and what outcomes result from exposure to stressful environmental stimuli (26,27).

Stressors Related to Being a Woman in a Man's Occupation

It has been recognized that women experience numerous unique stressors associated with their gender and sex roles (28,29). One important component of such stressors has been being negatively evaluated in the workplace by men. Ever since women have begun to move into predominately male occupations in significant numbers, there has much discussion, and some research, on the effect of being a woman in a man's environment. One of the best known early studies on this subject was conducted by Kandell (30). Research has found that women making such inroads face a variety of stressors including being stereotyped; encountering negative attitudes of supervisors and colleagues; being forced to perform at a higher level than men in order to be considered "as good" as men; being sexually harassed and discriminated against; and using equipment and procedures developed for men (31,32). (The vast majority of the victims of sexual harassment and discrimination are women [33].) A burgeoning area of research has focused on delineating the negative outcomes that may manifest themselves in response to various forms of sexual discrimination and harassment in the workplace such as differential hiring, work assignments, promotions and exclusion from social and peer networks in which work occurs (33,29).

Stressors Based on General Characteristics

Some of the types of stressors that have been examined most often are overload, role conflict, and lack of control over work. A model proposed by many researchers is that stress results from having higher levels of demands placed on one than one has available resources to meet those demands (34). The greater the discrepancy, the greater the stress. It has been found that stressors with the same characteristics do not necessarily have the same effects (e.g., overload can have differential effects depending on whether the domain is work or home).

With regard to research on women, there have been conflicting findings as to whether work or family responsibilities are the greater source of stress for women, and whether working outside the home increases or decreases stress. Many studies have found that, for women, having both a job and children is likely to increase stress because of conflicts between the two responsibilities (18,35,22,36). Some studies, however, have found that having a job outside the home decreases a woman's overall level of stress (37,30) and that working outside the home can actually buffer stressors at home (38). These conflicting findings appear to be explained by a variety of mediating variables, including the amount of support one has in the home (e.g., married working women tend to have less stress from having children than single working women) (30); type of occupation (34); number and age of children (34,39,40); support from supervisor (19,40); control over one's work (41); satisfaction from one's work (21), etc. Some research suggests that men have fewer conflicts and less stress than women related to the work/job interface because women tend to have a stronger identification with the parent role than men (42). Controlling on one's identification with the parent role appears to, at least partially, decrease gender differences in the experiences of stress.

Stressors and Women

In the report "Working Women's Health Concerns: A Gender at Risk," by the Bureau of National Affairs (43), many leaders of national women's organizations consider stress to be the most serious hazards faced by women. Findings from a wide variety of studies suggest that women perceive a greater number and more severe stressors in their lives than men (44,35,41,36). Furthermore (as discussed later), women also tend to have more negative outcomes from stress than men. Some of this gender difference appears to be the result of more stressful work/home conflicts among women, but even women without children tend to report higher levels of stress than their male colleagues. Some of the other hypothesized reasons for gender differences include: value differences (e.g., women tend place higher value on non-work life than men while men's identity is more strongly tied to their work role); lack of "fit" between the woman and a male work environment, which may emphasize masculine-oriented behaviors and characteristics such as competitiveness; being devalued and having less support from male colleagues and supervisors because of their gender; and a greater willingness to admit feeling stress and endorse items asking about health and mental health problems.

Variables Mediating Stressors and Outcomes

A number of factors can intervene between a stressor and its potential effects. Before discussing negative outcomes, we would like to briefly mention two sets of variables that may be seen as intervening, mediating, or buffering variables between stressors and outcomes: socio-demographics and social support. Socio-demographics such as age, income, education, and gender have all been found to affect the relationship between stressor and outcome (45,36). Social support is probably the most widely studied buffer of stressor outcomes and has been found to be one of the most effective (22,46,47). The magnitude of the impact of social support has been found to be associated with the source of the support (e.g., supervisor, colleague, friends, spouse) (1,4); for example, supervisor support has been found in many studies to be one of the most important sources of support for women. Women tend to use social support when available more often than men, and in some studies it has been found to be more important for women than for men (19,40).

Stress Related Outcomes

Psychosocial or Physiologic Stress

The effect of major stressors that are not well buffered is perceived stress that puts a strain on the individual's resources. Such stress is, unfortunately, a condition that cannot be totally avoided. Virtually all of us feel stress in our work or in our families from time to time. Such stress may result in minor irritability or fatigue. Over time, if the stressors are serious enough or persist long enough, and if we do not develop mechanisms for coping with them, they can produce more serious problems with functioning, health, and mental health.

Stress and Functioning

Increased levels of stress in response to gender-role stressors, including sexual harassment, have been found to be related to increased depression, anxiety, irritability, demoralization, and marital dissatisfaction (28,29). As noted above, a veritable multitude of occupational stressors have been examined for their impact on performance. Shift work has been demonstrated to be related to higher rates of on-the-job accidents. Additionally, it has been estimated that up to 20% of workers are unable to adapt to shift work and leave those jobs requiring shift work (48). Increased noise levels have been demonstrated to be related to fatigue and impaired efficiency on the job. Machine-paced workers have reported higher rates of boredom and job dissatisfaction than did non-machine-paced workers (26). Likewise under-utilization of abilities have been demonstrated to be very strongly related to job dissatisfaction and job boredom. Significantly higher levels of occupational instability were associated with exposure to traumatic stressors in Vietnam and subsequent development of posttraumatic stress disorder (PTSD) (49).

One extreme form of the negative effect of stress on functioning is burnout. Burnout is defined as "a state of physical emotional or mental (i.e., cognitive) exhaustion". (50) Burnout is marked by physical depletion and chronic fatigue, by feelings of hopelessness and helplessness, and by the development of a negative self-concept and negative attitudes toward work, life and other people" (50) It has been most often studied among health care workers and social service workers. Much research has been done, for example, on burnout among nurses and physicians (9,51,52). Burnout appears to be the result of an inability to cope with stress and has been found to produce negative outcomes not only for the individual but also for his or her employer, co-workers, and family. Many studies have found that women report more burnout than men (50, 43), although higher rates of reported burnout among women do not always result in poor performance among women (53). In addition to contributing to lower levels of productivity, absenteeism, more interpersonal friction and possible subsequent health problems (54,55,56,50), burnout has also been blamed for high job turnover among nurses (9) and teachers (55,56,57) among others.

Stress and Physical Health Outcomes

In reviews of the literature on the relationship between stress and physical health, both Elliot (58) and Bloom (9) reported that the evidence linking stressful life events with subsequent physical disorder seems very persuasive. Research began when it was discovered that, as a result of exposing animals to severe physical or psychological trauma, the functioning of a wide array of physiological systems was impaired and even death could occur. Later research with humans suggested that major life disruptions contributed to the development of many disorders, ranging from minor to major, such as infections, hypertension, heart attacks, cancer (8), and headaches and gastrointestinal disturbance (59). Likewise, occupational stressors have been implicated in the development of coronary heart disease, hypertension, migraines, peptic ulcers, ulcerative colitis, and diabetes among others (22). Furthermore, victims of sexual harassment report negative health consequences such as increased headaches, decreased appetite and sleep disturbance (29). Increasingly, research has shown that exposure to high levels of psychological stress (e.g., traumatic stressors) can produce elevated rates of health complaints and physician visits (60). Although this association is present in men, it seems especially pronounced in women.

Stress and Mental Health Outcomes

Stress plays a significant role in the development of psychiatric disorders and is related to impaired psychological functioning. Increased stress in response to stressors has been implicated in the development of depression, generalized anxiety disorder, and substance abuse (8,59). Negative mental health outcomes that have been found to be related to occupational stressors include increased anxiety, depression, substance abuse, irritability and somatic complaints. Exposure to traumatic stressors can be related to the onset of a variety of negative mental health outcomes, including depression, substance abuse, anxiety disorders (including PTSD), and personality disorders (49). PTSD is the most widely studied psychiatric disorder that can occur following exposure to a traumatic stressor (61,62). With regard to environmental and occupational stressors, a recent study by King et al. (63) using the National Vietnam Veterans Readjustment Study data, found that a malevolent environment (e.g., poor food, water, climate) had both the strongest direct effect and the strongest total effect (direct + indirect) effect on PTSD outcomes of the four dimensions of war zone stress.

Stress and Substance Abuse

There have been numerous studies that have found elevated rates of alcohol consumption among those with elevated levels of stress (64). In some studies of women, however, alcohol use has not been elevated but psychotropic medication (e.g., tranquilizers) has been (65). There are some studies that have found subjects actually reduced their alcohol use during stressful periods (66,67). Again, a variety of factors may influence the relationship between stress and substance abuse, such as socio-demographics and coping style.

Exposure to traumatic stressors have been strongly implicated in the elevated rates of substance abuse and dependence among veterans (68) and PTSD has been found to be highly co-morbid with substance abuse (49). Women who served in Vietnam with high levels of war zone stress were found to have significantly higher rates of alcohol abuse and dependence than other women veterans of the Vietnam era, while women theater veterans who were exposed to lower levels of such stress did not have significantly more alcohol disorders than other women veterans of the Vietnam era (49).

What Information Do We Need to Better Understand the Nature and Effects of Stressors on Women in the Military?

Much has still to be learned about stressors of women in the military in general and in the Army and Army Reserves specifically. Although stressors of military women have been found to be similar to the stressors of other women, and although negative outcomes related to stress appear to be similar for both populations, the information currently available is insufficient to develop effective intervention and prevention programs.

First, we need data on stressors and outcomes on a broader sample of women in the Army and Army Reserves. Previous studies have been focused particularly on nurses and small groups of other

women such as military police units. These data do not represent the wide variety of occupations of Army and Army Reserves women. We particularly need more information on Army Reserves. We have found no studies to date on stressors of these women.

Second, we need more detailed information on the stressors themselves--it is insufficient to say that "working in a predominately male environment" is a stressor. What are the specific factors that make these roles stressful and why are they less stressful in some units than in others?

Third, we need more information about the relative importance of different types of stressors and how stressors relate to socio-demographic characteristics, occupation, etc. Prevention and intervention programs can then be targeted for particular groups of women. For example, the most serious stressors for unmarried junior enlisted personnel may be different than those for older married women officers. The most important stressors of nurses are likely to be different from the most important stressors of combat support personnel.

Fourth, and similarly, we need to better understand those factors that mediate stressors. For example, how does social support influence whether a particular type of stressor impacts negatively one woman and not another with similar demographic characteristics? What organizational structures and programs might be changed or developed to help women in the Army and Army Reserves access and use buffers such as social support more effectively?

The current study will address these issues by examining the following:

1. What are some of the most important stressors of women in the Army and Army Reserves and what is relative importance of the various stressors? We need information about both war zone and non-war zone stressors, both acute and chronic stressors, and stressors of women in the myriad roles they now occupy in the Army.
2. What are the negative outcomes that are the result of stress and how is exposure related to outcome? We need information on the relationship between stressors and diverse serious outcomes: health consequences, mental health consequences, substance abuse and dependence, and job performance and retention.
3. How do mediating variables impact the relationship between stressors and outcomes? For example, how do socio-demographic characteristics, such as age and rank, mediate the effects of stressor exposure on outcome? What potential buffers--such as support from supervisor--are most effective at reducing negative outcomes?
4. What characteristics of the unit are associated with negative outcomes?

This study will provide data never available before---data that Army decision-makers and planners can use to develop mechanisms, such as prevention and intervention programs, to reduce stressors and their impact on Army women.

Outcomes to be Examined

The preceding literature review discusses the relationship found between stressors and a wide variety of negative physiological, psychological, and functioning outcomes that have been found to be associated with stress. In our study, however, because the questionnaire could not be long or complex since it was self-administered, we used global assessment measures and/or screeners rather than full-length assessments for specific disorders. For example, we used the General Health Questionnaire (GHQ) to assess psychological distress that is associated with a variety of psychiatric disorders rather than assessing specific disorders. The GHQ has been found to be a useful in identifying psychiatric disturbance associated with many different disorders such as major depression and post-traumatic stress disorder. We used the Brief Michigan Alcoholism Screening Test (MAST) to screen for alcohol problems, another widely used screening measure. Currently, there is no validated measure of military functioning. Therefore, we have incorporated questions used in previous RTI research. We will estimate

Chronbach's alpha for the military functioning items to determine if they may be measuring different aspects of a single domain or whether each item measures something so different that they cannot be combined into a single measure of military functioning. Although there are limitations in using such global measures, we will use caution when summarizing the data from these instruments.

9. PLAN:

A. Subjects:

The study subjects include women 18 years and over. They will be active duty women assigned to the Walter Reed Army Medical Center. These women will be recruited at the bi-monthly Birth Month Activity Registration (BMAR). The selection of subjects for Walter Reed will differ from that for other installations. It will not involve the chain of command.

We propose to interview women during the bi-monthly Birth Month Activity Registration (BMAR) training. This would allow us to approximate a true random sample of staff working at Walter Reed. We propose to interview women during their lunch break at their BMR training. If permitted, we will provide a simple catered lunch (probably sandwiches and salads) so that women will not have to miss lunch. We propose that at or near the beginning of the BMAR morning, RTI staff (or, alternatively, the PI, Dr. Engel) make a short announcement about the study, its voluntary nature, and where the volunteers can go during the BMAR lunch period to participate. A complete description of the selection and administration plan is attached.

B. Inclusion and Exclusion Criteria:

All women attending their scheduled BMAR will be eligible to participate. There are no exclusion criteria for the women attending the BMAR. Participation is completely voluntary and confidential. By reporting at the appointed time, participants have fulfilled their requirement to participate. We will not inform Commanders or anyone on the installation who chose to participate and who did not. Their participation is important to the study, but they are free to leave if they do not want to complete the survey. They may also refuse to participate at any later point without suffering any penalty or losing any benefits to which they are entitled. If they choose to complete the survey, they can refuse to answer any or all of the questions.

C. Study Design:

This is a descriptive study that will provide critical information for thinking about potential preventive efforts. The data from this study will enable us to assess the distribution of stress exposure across women in the major occupational specialties and different deployment statuses that women hold in the Army and Army Reserves today. We will be able to provide data on a broader array of women, stressors, occupations, and outcomes than has ever before been gathered. Therefore, our data will provide a more complete portrait of the most important stressors of women in these branches of the military, particularly women in the most common occupational specialties.

The study design included two stages. The first was a series of focus groups with active duty and reserve army women to collect data on major stressors and outcomes. Because high level military women are difficult to gain access to, we had senior women officers fill out a questionnaire at this stage. The second stage is to collect data from 800 active duty and 800 reserve women using a self-administered questionnaire at installations across the US. Data collection began in 1998 and will continue through January 2000.

Initially we will determine: a) the nature, likelihood, and outcomes associated with various types of stressors for women currently in the Army; and, b) the mediating effects of socio-demographic characteristics of the individual, the women's occupation and family, the environment, and other factors may have on outcomes.

RTI has successfully completed survey administrations at 8 Army Reserve and 10 Army Active Duty installations. The following lists the sites where surveys were administered and the dates of the administration.

Army Active Duty

<i>Ft. Meyer</i>	<i>Dec. 7 & 8, 1998</i>
<i>Ft. Belvoir</i>	<i>Dec. 12, 1998</i>
<i>Ft. Meade</i>	<i>Feb. 25 & 26, 1999</i>
<i>Ft. Hood</i>	<i>April 7 & 8, 1999</i>
<i>Ft. Campbell</i>	<i>April 13, 1999</i>
<i>Ft. Carson</i>	<i>July 7, 1999</i>
<i>Ft. Reilly</i>	<i>May 12, 1999</i>
<i>Ft. Stewart</i>	<i>Aug. 23-25, 1999</i>

Army Reserve

<i>Oakdale, PA HHC</i>	<i>Aug 15, 1998</i>
<i>Oakdale, PA 339th</i>	<i>Sept 12&13, 1998</i>
<i>Walter Reed AMC</i>	<i>Sept 19, 1998</i>
<i>Ft. Totten</i>	<i>Nov 14&15, 1998</i>
<i>81st RSC Alabama</i>	<i>Nov 14, 1998</i>
<i>87th RSC Alabama</i>	<i>Nov 15, 1998</i>
<i>Ft. Bragg</i>	<i>Jan 9&10, 1999</i>
<i>108th Charlotte, NC</i>	<i>Jan 23&24, 1999</i>
<i>Ft. Garner</i>	<i>April 11, 1999</i>
<i>Ft. Belvoir</i>	<i>June 26, 1999</i>

To date we have collected 584 completed interviews from Army Reservists women and 644 completed interviews from Army Active Duty women. We were not required to request approval in writing from any of these installations at anytime during the survey administration process.

D. Methodology:

RTI staff will contact Dr. Charles Engel upon approval of this study by the Department of Clinical Investigations. We will request general information about the Active Duty women currently assigned to the WRAMC. The data will include rank, race, and MOS. No identifying information will be requested or accepted by the RTI staff. Dr. Charles Engel, Principal Investigator, will assist us with the following information:

- what time we can address the women during the morning of the first and second BMAR day;

- where the BMAR will be held and what portion of those facilities can be used for the survey administration;
- demographic, but non-identifying, information on the women scheduled to attend each BMAR that includes race, rank and MOS code; and,
- how many women we can expect at each BMAR session.

We will introduce and explain the to the women attending the BMAR during the first few minutes of days 1 and 2 of the BMAR. We will be asking them to stay and complete a questionnaire during their assigned mealtime. We will be providing a buffet lunch so that they are not burdened by forgoing lunch to complete the survey.

We will conduct one or two administrations at every BMAR during November and December 1999, and January 2000. For privacy and confidentiality issues we request that no military personnel attend the administration sessions unless they are women filling out the survey.

Two RTI Survey Administrators will arrive at the BMAR designated location one day prior to the first administration to meet with Dr. Charles Engel and the POC, verify the survey administration location, ensure that the designated room is adequate in size and provides confidentiality.

On the day of the administration, RTI Survey Administrators will arrive at the BMAR designated location one-hour prior to administration. RTI will make sure the necessary equipment is available for the meal time administration. There will be an information sheet at every seat. Once the BMAR administrative staff gives us the opportunity we will ask the women in attendance read the information sheet. The survey administrators will speak briefly about the survey and answer any questions that the women may have. At that time the RTI survey administrators will also ask the women to volunteer to stay during their assigned mealtime to complete a survey.

There should be no military staff person monitoring the administration of the survey on-site. No military staff should be "posted" to ensure women attend or stay. However, Dr. Engel or the POC are welcome to stop by and check in with RTI Survey Administrators at the beginning and end of the administration to make sure that everything is going well. For reasons related to confidentiality RTI can not provide information to the supervisors, contact persons, commanders, or anyone else at the WRAMC regarding whom did or did not attend the survey administration.

Once the women are dismissed for mealtime, those choosing to volunteer to complete a survey will gather in the area designated for the administration of the survey. The women will be asked to sit with space between them for privacy and confidentiality, so the room would need to accommodate that, as well. RTI will explain that the survey takes most women between 40 minutes and an hour and a half and that they have been approved by their Commander to stay for up to an hour and a half, so should not feel rushed if other women finish more quickly. RTI will point out that every woman's life situation is different, and that will affect the amount of time it takes to complete the survey. When the women are done with their survey, they should record on the last page the length of time it took them to complete it. This is important so that RTI can monitor how long women are spending answering these questions. Also, RTI will request that the women take the information sheet with them when they leave in case they need to contact one of the RTI researchers with questions or comments regarding the survey. Finally, the women should bring their survey and pen to the front and place them in the box before leaving.

RTI will safeguard and securely package these boxes for their return via Federal Express to our home office in Research Triangle Park, North Carolina where they will be processed

confidentially.

E. Data Collection:

We have included a copy of the questionnaire with these materials for your review (see Appendix D). Please bear in mind the extreme sensitivity of the questions asked requires that you treat it as highly confidential and do not disclose its content to others. RTI holds copyright for this questionnaire and therefore any duplication of this document would be illegal.

This survey is completely confidential. The women's' names should not appear anywhere on the questionnaire. Additionally, the name of any person who completed the survey should not be mentioned. When the women have completed their questionnaire, they will return it to a box that will be safeguarded by RTI Survey Administrators at all times until its return to RTI's office.

F. Sample Size/Data Analysis:

The required sample size for the Walter Reed Army Medical center is 200 active duty women with a MOS related to medical training or service.

Our analysis will begin by generating descriptive statistics for the demographic variables, individual stressors, buffers, and outcome variables. We will examine the bi-variate relationships between the variables before proceeding with multivariate analysis. This will include examining two-way tables and correlations between variables (e.g., individual stressor variables with socio-demographics and occupation). We will then proceed with the multivariate analyses, starting with the development of indices for stressors and outcomes (e.g., a health problems index and an occupational stressor index using factor analysis). These analyses will include testing different indices based on occupation, marital status, parental status, etc. We will then examine the psychometric properties of our indices. Next, we will conduct multiple and logistic regression to test the various hypotheses. The advantage of these procedures is that, for each outcome measure, we can assess the amount of variance explained by each type of stressor (i.e., the *relative* importance of each type of stressor on each outcome examined).

Thus, we will be able to:

- (a) determine which stressors have a significant negative impact on outcomes, controlling for other stressors and for background variables;
- (b) rank order by effect size those stressors that have such an impact; and
- (c) determine the relative magnitude of the effect of each stressor on each outcome.

This is an important first step for the development of cost-effective interventions to reduce the impact of important stressors. We believe that an exploratory approach is appropriate given the state of current knowledge about the impact of stressors on women soldiers; we also believe that the risk of spurious findings is reduced by the use of a specific conceptual model to drive the analyses.

Reports and manuscripts that result from these analyses will describe:

- (a) the sample of women included in the analysis;
- (b) the types of stressors reported most frequently;
- (c) the negative outcomes reported most frequently;
- (d) the relative importance of various types of stressors on each type of outcome;
- (e) how stressors vary by occupational specialty and deployment status;
- (f) how characteristics of the individual, such as age and rank, mediate the impact of stressors on

- outcomes; and,
- (g) how buffers, such as social support from supervisor, mediate the relationship between stressors and outcomes.

- G. FACILITIES TO BE USED:** The facilities to be used are those provided for the BMAR.
- H. TIME REQUIRED TO COMPLETE:** No longer than 1.5 hours per session.
- I. ANTICIPATED START DATE:** November 29, 1999.
- J. EXPECTED COMPLETION DATE:** January 30, 2000.
- K. TYPE OF SUBJECT POPULATION TO BE STUDIED:** Active duty women assigned to the Walter Reed Army Medical Center in a medical or related MOS.

10. REFERENCES

1. Lazarus RS, Folkman S, Gruen R. Stress and adaptational outcomes: the problem of confounded measures, *Am Psychol* 1985;40:770.
2. Baum A, O'Keefe M, Davidson L. Acute stressors and chronic response: the case of traumatic stress. *J Appl Soc Psycho* 1990;20(20):1643-1654.
3. Dohrenwend BP, Shrout PE. "Hassles" in the conceptualization and measurement of life stress variables, *Am Psychol* 1981;9:128.
4. Hobfoll SE. Conservation of resources: a new attempt at conceptualizing stress, *Am Psychol* 1989;44:513.
5. Seyle H. *The Stress of Life*. New York: McGraw-Hill, 1956, 1976.
6. Davidson LM, Baum A. Predictors of chronic stress among Vietnam veterans: stressor exposure and intrusive recall. *J Traumatic Stress* 1993, April;6(2):195-212.
7. Fletcher BC. *Work, Stress, Disease, and Life Expectancy*. New York: Wiley, 1991.
8. Cheren S. *Psychosomatic Medicine: Theory, Physiology, and Practice*. Madison, CT: International Universities Press, 1989.
9. Bloom BL. *Stressful Life Event Theory and Research: Implications for Primary Prevention*. Rockville, MD: National Institute of Mental Health, 1985. DHHS Publication No. (ADM) 85-1385.
10. Lazarus R, Folkman S. *Stress, Appraisal, and Coping*. New York: Springer, 1984.
11. Holmes TH, Rahe RH. The social readjustment ratings scale, *J Psychosom Res* 1967;11:213.

12. Kanner AD, Coyne JC, Shaefer C, Lazarus RS. Comparison of two modes of stress management: daily hassles and uplifts versus major life events. *J Behav Med* 1981;4(1):1-39.
13. Russell M, Davey GCL. The relationship between life event measures and anxiety and its cognitive correlates. *Person Individ Diff* 1993;14:317-322.
14. Russell DEH. *The Secret Trauma: Incest in the Lives of Girls and Women*. New York: Basic Books, 1986.
15. Henderson S, Byrne DG, Duncan-Jones P. *Neurosis and the Social Environment*. Sydney: Academic Press, 1981.
16. Paykel ES, Prusoff BA, Ulenhuth EH. Scaling of life events. *Arch Gen Psychiatry* 1971;25:340-347.
17. Ruffin CL. Stress and health: Little hassles vs. major life events. *Australian Psychologist* 1993;28:201-208.
18. Barnett RC, Baruch GK. Women's involvement in multiple roles and psychological distress. *J Pers Soc Psychol* 1985;49:133-145.
19. Houston BK, Cates DS, Kelly KE. Job stress, psychosocial strain, and physical health problems in women employed full-time outside the home and homemakers. *Women Health* 1992;19(1):1-27.
20. Pittman JF, Orthner DK. Gender differences in the prediction of job commitment. *J Soc Behav Pers* 1988;3:227-248.
21. Barnett RC, Davidson H, Marshall NL. Physical symptoms and the interplay of work and family roles. *Health Psychol* 1991;10(2):94-101.
22. Greenglass ER. Type A behavior and coping strategies in female and male supervisors. *Appl Psychol* 1988;37:271-288.
23. Di Salvo V, Lubbers C, Rossi AM, Lewis J. The impact of gender on work-related stress. *J Social Behavior and Personality* 1988;3:161-176.
24. Perkins DV. The assessment of stress using life events scales. In L. Goldberger and S. Breznitz (Eds.), *Handbook of Stress: Theoretical and Clinical Aspects*. New York: The Free Press, 1982:320-331.
25. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed. rev). Washington, DC: American Psychiatric Association, 1987.
26. Goldberger L. Sensory deprivation and overload. In L. Goldberger S. Breznitz (Eds.), *Handbook of Stress: Theoretical and Clinical Aspects*. New York: The Free Press, 1982:419-444.
27. Holt RR. Occupational stress. In L. Goldberger, S. Breznitz (Eds.), *Handbook of Stress: Theoretical and Clinical Aspects*. New York: The Free Press, 1982:419-444.

28. Kaminoff RO, Proshansky HM. Stress as a consequence of the urban physical environment. In L. Goldberger, S. Breznitz (Eds.), *Handbook of Stress: Theoretical and Clinical Aspects*. New York: The Free Press, 1982:380-409.
29. Belle D. The stress of caring: Women as providers of social support. In L. Goldberger, S. Breznitz (Eds.), *Handbook of Stress: Theoretical and Clinical Aspects*. New York: The Free Press, 1982:496-505.
30. Charney DA, Russell RC. An overview of sexual harassment. *Am J Psychiatry* 1994;151(1):10-17.
31. Kandel DB, Davies M, Raveis VH. The stressfulness of daily social roles for women: marital, occupational and household roles. *J Health Soc Behav* 1985;26(1):64-78.
32. Yarney AD. *Understanding Police and Police Work: Psychosocial Issues*. New York: New York University Press, 1990.
33. Wexler JG, Logan DD. Sources of stress among women police officers. *J Police Sci Admin* 1983;11:46-53.
34. Shrier DK. Sexual harassment and discrimination: impact on physical and mental health. *New Jersey Medicine* 1990;87:105-107.
35. Kushnir T, Kasan R. Major sources of stress among women managers, clerical workers, and working single mothers: demands vs. resources. *Public Health Rev* 1992;20:215-229.
36. Fatkin LT. Daily reports of distress: not for women only. *Work and Stress* 1987;1:261-270.
37. Beena C, Poduvai PR. Gender differences in work stress of executives. *Psychol Stud* 1992;37(2 & 3):109-113.
38. Stellman JM. *Women's Work, Women's Health: Myths and Realities*. New York: Pantheon Books, 1977.
39. Maslach C, Jackson SE. The role of sex and family variables in burnout. *Sex Roles* 1985;12:837-851.
40. Bowen GL, Orthner DK, Zimmerman LI. Family adaptation of single parents in the United States Army: an empirical analysis of work stressors and adaptive resources. *Family Relations* 1993;42:293-304.
41. Lawrence CL. Female police officers: relationship between social support, occupational stress and strain. *Dissertation Abstracts International* 1986;47(05-B):2171. University Microfilms No. AAD86-16487.
42. Karasek R, Gardell B, Lindell J. Work and non-work correlates of illness and behavior in male and female Swedish white collar workers. *J Occup Behav* 1987;8:187-207.

43. Simon RW. Parental role strains, salience of parental identity and gender differences in psychological distress. *J Health Soc Behav* 1992;33:25-35.
44. Stress tops list of workplace hazards affecting women. *The Maryland Nurse* 1989 (April);8(3):1.
45. Zappert LT, Weinstein HM. Sex differences in the impact of work on physical and psychological health. *Am J Psychiatry* 1985;142:1174-1178.
46. Bartz C, Maloney JP. Burnout among intensive care nurses. *Res Nurs Health* 1986;9:147-153.
47. Etzion D. Moderating effect of social support on the stress-burnout relationship. *J App Psychol* 1984;69:615-622.
48. Cohen S, Wills TA. Stress, social support, and the buffering hypothesis. *Psychol Bull* 1985;98:310-357.
49. Bruusgard A. Shiftwork as an occupational health problem. *Studia Laboris et Salutis* 1975;4:9-14.
50. Kulka RA, Fairbank JA, Jordan BK, Weiss DS. *Trauma and the Vietnam War Generation*. Brunner/Mazel: New York, 1990.
51. Etzion D, Pines A. Sex and culture in burnout and coping among human service professionals: a social psychological perspective. *J Cross-Cultural Psychology*, 1986;17:191-209.
52. Firth-Cozens J. Sources of stress in women junior house officers. *Br Med J*, 1990;301:89-91.
53. Young EH. Relationship of residents' emotional problems, coping behaviors, and gender. *J Med Educ* 1987;62:642-650.
54. Bartol CR, Bergen GT, Volckens JS, Knoras KM. Women in small-town policing: Job performance and stress. *Criminal Justice and Behavior* 1992;19:240-259.
55. Hammer JS, Mathews JJ, Lyons JS, Johnson NJ. Occupational stress within the paramedic profession: an initial report of stress levels compared to hospital employees. *Ann Emerg Med* 1986;15:536-539.
56. Beer J, Beer J. Burnout and stress, depression and self-esteem of teachers. *Psychol Rep* 1992;71:1331-1336.
57. Greenglass ER, Burke RJ, Ondrack M. A gender-role perspective of coping and burnout. *App Psychol* 1990;39:5-27.
58. Schonfeld IS. A longitudinal study of occupational stressors and depressive symptoms in first-year female teachers. *Teaching & Teacher Education* 1992;8:151-158.
59. Attridge C, Callahan M. Women in women's work: nurses, stress and power. *Recent Advances in Nursing* 1989;25:41-69.

60. Elliott G. Stress and illness. In S. Cheren (Ed.), *Psychosomatic Medicine: Theory, Physiology, and Practice (Vols. 1 and 2)*. Madison, CT: International Universities Press, 1989:45-90.
61. Aguilera D. *Crisis Intervention: Theory and Methodology* (7th ed.). St. Louis, MO: Mosby, 1994.
62. Wolfe J, Schnurr PP, Brown PJ, Furey J. Posttraumatic stress disorder and war-zone exposure as correlates of perceived health in female Vietnam war veterans. *J Consult Clin Psychol* 1994; 62:1235-1240.
63. Caddell JM, Drabman RS. Post-traumatic stress disorder in children. In R.T. Ammerman, M. Hersen (Eds.), *Handbook of Behavior Therapy with Children and Adults: A Longitudinal Perspective*. Needham, MA: Allyn and Bacon; 1993:219-235.
64. Fairbank JA, Schlenger WE, Caddell JM, Woods MG. Post-traumatic stress disorder. In P.B. Sutker & H.E. Adams (Eds.), *Comprehensive Handbook of Psychopathology*. New York: Plenum Press, 1993:145-163.
65. King DW, King LA, Gudanowski DM, Vreven DL. Alternative representations of war zone stressors: relationships to posttraumatic stress disorder in male and female Vietnam veterans. *J Abnorm Psychol* 1995;104(1):184-196.
66. Keane TM, Gerard RJ, Lyons JA, Wolfe J. The interrelationship of substance abuse and posttraumatic stress disorder: epidemiological and clinical considerations. In Galanter M (Ed.), *Alcoholism* (Vol. 6). New York: Plenum Press, 1988.
67. Brown-Rowat B, Amsel R, Jeans ME. Professional and executive women: health and lifestyle characteristics. *Health Care for Women International* 1990;11:133-149.
68. Breslin FC, O'Keefe MK, Burrell L, Ratliff-Crain J et al. The effects of stress and coping on daily alcohol use in women. *Addict Behav* 1995;29(2):141-147.
69. Welte JW, Mirand, AL. Drinking, problem drinking and life stressors in the elderly general population. *J Stud Alcohol* 1995;56(1):67-73.
70. McFall ME, Mackay PW, Donovan D. Combat-related posttraumatic stress disorder and severity of substance abuse in Vietnam veterans. *J Stud Alcohol* 1992;53:357-363.
71. Adelsberger B. As job restrictions ease, female recruiting prospers. *Army Times* August 1994;14.
72. U.S. Department of Defense, Office of the Assistant Secretary of Defense (Personnel and Readiness). *Population Representation in the Military Services Fiscal Year 1992*. Washington, DC, October 1993.
73. Moore BL. African-American women in the U.S. military. *Armed Forces & Society* 1991;17:363-384.
74. Leiter MP, Clark D, Durup J. Distinct models of burnout and commitment among men and women in the military. *J Appl Behav Sci* 1994;30(1):63-82.

75. Kelley ML, Herzog-Simmer PA, Harris MA. Effects of military- induced separation on the parenting stress and family functioning of deploying mothers. *Mil Psychol* 1994;6:125-138.
76. Wynd CA, Dziedzicki RE. Heightened Anxiety in Army Reserve nurses anticipating mobilization during Operation Desert Storm. *Mil Med* 1992;157(12):630-634.
77. Birgenheier PS. Parents and children, war and separation. *Pediat Nurs* 1993;19:471-476.
78. Rindfuss RR, Stephen EH. Marital noncohabitation: separation does not make the heart grow fonder. *J Marriage and the Family* 1990;52:259-270.
79. Chandler J, Bryant L, Bunyard T. Women in military occupations. *Work, Employment & Society* 1995;9:123-135.
80. Bishop GD. Gender, role, and illness behavior in a military population. *Health Psychol* 1984;3:519-534.
81. DeVilbiss MC. Gender integration and unit deployment: a study of GI Jo. *Armed Forces & Society* 1985;11:523-552.
82. Culbertson AL, Rosenfeld P. Assessment of sexual harassment in the active-duty Navy. *Mil Psychol* 1994;6(2):69-93.
83. Perconte ST, Wilson AT, Pontius EB, Dietrick AL, Spiro KJ. Psychological and war stress symptoms among deployed and non-deployed reservists following the Persian Gulf War. *Mil Med* 1993;158:516-521.
84. Engel CC, Engel AL, Campbell SJ, McFall ME, Russo J, Katon W. Posttraumatic stress disorder symptoms and precombat sexual and physical abuse in Desert Storm veterans. *J Nerv Ment Dis* 1993;181:683-688.
85. Wolfe J, Brown PJ, Bucsela ML. Symptom responses of female Vietnam veterans to Operation Desert Storm. *Am J Psychiatry* 1992;149(5):676-679.
86. Baker RR, Menard SW, Johns LA. The military nurse experience in Vietnam: stress and impact. *J Clin Psychol* 1989;45:736-744.
87. Norman EM. Post-traumatic stress disorder in military nurses who served in Vietnam during the war years 1965-1973. *Mil Med* 1988;153(5):238-242.
88. Schnaier JA. A study of women Vietnam veterans and their mental health adjustment. In C.R. Figley, (Ed.), *Trauma and Its Wake. Vol. II: Traumatic Stress Theory, Research, and Intervention*. New York: Brunner/Mazel, 1986.
89. Brende JO, Parson ER. Special veteran groups: Women and the ethnic minorities. In JO Brende, ER Parson (Eds.), *Vietnam Veterans: The Road to Recovery*. New York: Plenum Press, 1985.

90. Paul EA, O'Neill J. American nurses in Vietnam: stressors and aftereffects. *Am J Nurs* 1986;86(5):526.
91. Ott J. Women Vietnam veterans. In SM Sonnenberg, AS Blank, JA Talbott (Eds.), *The Trauma of War: Stress and Recovery in Vietnam Veterans*. Washington, DC: American Psychiatric Press Inc., 1985.
92. McCarroll JE, Ursano RJ, Fullerton CS, Lundy A. Traumatic stress of a wartime mortuary: anticipation of exposure to mass death. *J Nerv Ment Dis* 1993;181(9):545-551.
93. Sutker PB, Uddo M, Brailey K, Allain AN, Errera P. Psychological symptoms and psychiatric diagnoses in Operation Desert Storm troops serving graves registration duty. *J Trauma Stress* 1994;7(2):159-171.
94. Hoiberg A. Sex and occupational differences in hospitalization rates among Navy enlisted personnel. *J Occup Med* 1980;22:685-690.
95. Hines JF. A comparison of clinical diagnoses among male and female soldiers deployed during the Persian Gulf War. *Mil Med* 1993;158:99-101.
96. Briscoe ME. Why do people go to the doctor? Sex differences in the correlates of GP consultation. *Soc Sci Med* 1987;25:507-513.
97. Nathanson CA. Illness and the feminine role: a theoretical view. *Soc Sci Med* 1975;9:57-62.
98. Verbrugge LM. Gender and health: an update on hypotheses and evidence. *J Health Soc Behav* 1985;26:156-182.
99. Nice DS, Hilton S. Sex differences and occupational influences on health care utilization aboard U.S. Navy ships. *Mil Psychol* 1994;6:109-123.
100. Misner TR, Bell MR, O'Brien DE. *Health Status of Women in the Army*. Fort Sam Houston, TX, Health Services Command, U.S. Army Health Care Studies and Clinical Investigation Activity, 1987.
101. Schumm WR, Bell DB, Palmer-Johnson CE, Tran G. Gender trends in the U.S. Army and a discussion of implications for readiness and retention. *Psychol Rep* 1994;74:499-511.

11. FUNDING IMPLICATIONS:

a. Funding or other resources will be from outside sources: Yes X No

If yes, provide detailed information or submit a budget page about the transfer of funds and/or other resources.

The study is being funded by a grant from the U.S. Army Medical Research, Development, Acquisition, and Logistics Command. No expense will be incurred by Walter Reed.

RTI is managing the project funds, in particular the Co-Principal Investigator, Dr. Kathleen Jordan is responsible for the management of the funds.

b. Budget request from DCI: NA.

12. NUMBER OF PATIENTS/CHARTS TO BE STUDIED: The number of subjects to be studied at WRAMC is 200 women.

13. TYPE OF SUBJECT POPULATION TO BE STUDIED: Female military personnel over the age of 18 in the occupations of Administration, Supply, Signal Medical, and other totaling 200 women at WRAMC.

14. DATE PREPARED: July 1, 1999; Revised November 10, 1999

APPENDIX D
SURVEY QUESTIONNAIRE

1998 DEPARTMENT OF THE ARMY SURVEY OF STRESSORS AND THEIR IMPACTS ON WOMEN IN THE ARMY/ARMY RESERVES

INTRODUCTION

Who are we? We are from Research Triangle Institute (RTI), a not-for-profit research company under contract to the U.S. Army Medical Research and Materiel Command.

How were you selected? You were randomly selected by your commander to participate in this important survey based on your occupation, rank, and background.

Must you participate? Your participation in this survey is voluntary. We encourage you to answer all of the questions honestly, but you are not required to answer any question to which you object.

What are the questions about? Mainly about people, events, and activities that can be stressful, and potential health and other effects of stress. Additional questions ask about support from family, friends, and others.

Who will see your answers? Only civilian researchers from RTI. No military personnel will see your answers. Your answers will be combined with those from other military personnel to prepare a statistical report. This questionnaire will be anonymous if you DO NOT WRITE YOUR NAME OR SOCIAL SECURITY NUMBER ANYWHERE IN THIS BOOKLET.

INSTRUCTIONS FOR COMPLETING THE QUESTIONNAIRE

- Most questions provide a set of answers. The answer choices are different for different questions, so please read all the printed answers before marking your choice. If none of the printed answers exactly applies to you, mark an ☒ in the box for the one answer that best fits your situation.

Example:

Are you currently in the U.S. Army or Reserves?

☒ Yes

☐ No

- If you have any questions, please ask the proctor who distributed this questionnaire.

A. Your Background

A1. How old were you on your last birthday?

Years old

A2. How many years have you served (did you serve) on active duty in the Army?
(If you had a break in service, add together current time and time in previous tours.)

Number of years

☐ None

A3. How many years have you served in the active duty Army?

Number of years

☐ None

A4. What is your current rank?

☐ ₁ E1 - E4

☐ ₄ WO1 - WO2

☐ ₆ O1 - O3

☐ ₂ E5 - E6

☐ ₅ WO3 - WO5

☐ ₇ O4 - O6

☐ ₃ E7 - E9

☐ ₈ O7 - O10

A5. What is your highest level of education now?

☐ ₁ Did not graduate from high school

☐ ₂ GED or ABE certificate

☐ ₃ High school graduate

☐ ₄ Trade or technical school graduate

☐ ₅ Some college but not a 4 year degree

☐ ₆ 4 year college degree (BA, BS, or equivalent)

☐ ₇ Graduate or professional study but no graduate degree

☐ ₈ Graduate or professional degree

A6. Are you of Hispanic or Latino origin or descent?

☐ ₁ Yes

☐ ₂ No

A7. Which of these categories best describes you? **(Mark all that apply.)**

☐ ₁ American Indian/Native American/Alaskan Native

☐ ₂ Native Hawaiian or Pacific Islander

☐ ₃ Black/African American

☐ ₄ Asian

☐ ₅ White/Caucasian

☐ ₆ Other **(Please write in below.)**

B. Your Military Experience

Please read the job categories shown on the following two pages to select one of the following categories that best describes your military job (Enlisted job categories are shown on page 4. Officer job categories are shown on page 5.)

B1. Please mark below the category that best describes your military job.

ENLISTED

- ☐ ₁ Infantry, Gun Crew, or Seamanship Specialist
- ☐ ₂ Electronic Equipment Repairman
- ☐ ₃ Communications or Intelligence Specialist
- ☐ ₄ Health Care Specialist
- ☐ ₅ Other Technical or Allied Specialist
- ☐ ₆ Functional Support and Administration
- ☐ ₇ Electrical/Mechanical Equipment Repairman
- ☐ ₈ Craftsman
- ☐ ₉ Service and Supply Handler
- ☐ ₁₀ Non-Occupational

OFFICER

- ☐ ₁ General Officer or Executive
- ☐ ₂ Tactical Operations Officer
- ☐ ₃ Intelligence Officer
- ☐ ₄ Engineering or Maintenance Officer
- ☐ ₅ Scientist or Professional (not involved with health care)
- ☐ ₆ Health Care Officer
- ☐ ₇ Administrator
- ☐ ₈ Supply, Procurement, or Allied Officer
- ☐ ₉ Non-Occupational

ENLISTED JOB CATEGORIES

(If you are an **officer**, please turn the page over to find examples of officer job categories.)

CATEGORIES	EXAMPLES
Infantry, Gun Crew, or Seamanship Specialist	Individual weapons specialists, crew-served artillery specialists, armor and amphibious crew, specialists in combat engineering and seamanship, air crew, and installation security personnel.
Electronic Equipment Repairman	Specialists in the maintenance and repair of electronic equipment, such as radio, radar, sonar, navigation, weapons, and computers.
Communications or Intelligence Specialist	Specialists in the operation and monitoring of radio, radar, sonar, and gathering and interpretation of intelligence.
Health Care Specialist	Specialists in patient care and treatment, medical support, and related medical and dental services.
Other Technical or Allied Specialist	Specialists in skills not classified elsewhere, such as photography, mapmaking, weather, ordnance disposal, laboratory analysis, and music.
Functional Support and Administration	General administrative, clerical, and professional specialists, including administrative specialists in data processing, functional support specialists (in areas such as supply, transportation, and flight operations), chaplains' assistants, and public affairs specialists.
Electrical/Mechanical Equipment Repairman	Specialists in the maintenance and repair of aircraft, automotive equipment, missile systems, marine engines and boilers, power-generating equipment, and other mechanical and electrical equipment.
Craftsman	Metalworkers, construction workers, plumbers, electricians, heating and cooling specialists, lithographers, and other trades.
Service and Supply Handler	Personnel in food service, operation of motor transport, shipping and receiving, law enforcement, laundry and dry cleaning.
Non-Occupational	Includes officer candidates, authorizations for personnel in a student status, or personnel serving in duties of a special or otherwise undesignated nature.

OFFICER JOB CATEGORIES

(If you are an enlisted, please turn the page over to find examples of enlisted job categories.)

CATEGORY	EXAMPLES
General Officer or Executive	Includes all officers of General/Flag rank, all Marine Corps full Colonels, and all directors, planners, or executives not classified elsewhere.
Tactical Operations Officer	Includes pilots and aircraft crews, such as navigators; infantry, artillery, armor, and close support officers; Naval ship commanders; missile systems officers and missile unit commanders; and combat and operations officers.
Intelligence Officer	Includes strategic, general, and communications intelligence officers, and counterintelligence officers.
Engineering or Maintenance Officer	Includes civil engineers and architects; electrical engineers; communications engineers and communications officers; aircraft maintenance officers and aeronautical engineers; weapons engineering and maintenance officers; missile maintenance officers; ground, aviation, and weapons safety officers; chemical engineers; and topographic engineers, and cartographic and aerial mapping officers.
Scientist or Professional (not involved with health care)	Includes chemists, biological scientists, physicists, geologists, meteorologists, social or behavioral scientists, lawyers, chaplains, mathematicians and statisticians, and military college faculty members.
Health Care Officer	Includes physicians, dentists, nurses, veterinarians, allied health officers, and health services administration officers.
Administrator	Includes general administrative officers, manpower and personnel managers, comptrollers and accounting officers, data processing officers, public and internal information officers, police, Inspector General and technical inspection positions, morale and welfare officers, and officers engaged in the planning, management, and operation of training programs.
Supply, Procurement, or Allied Officer	Includes officers in supply, procurement and production, transportation, food service, and related logistical activities.
Non-Occupational	Includes law students, medical students, flight students, other trainees, and billet designators.

B2. As of today, how many months have you been assigned to your present permanent installation or duty station?

- | | |
|---|---|
| <input type="checkbox"/> ₁ Less than 1 month | <input type="checkbox"/> ₄ 7 - 12 months |
| <input type="checkbox"/> ₂ 1 - 3 months | <input type="checkbox"/> ₅ 1 year - 1 year and 11 months |
| <input type="checkbox"/> ₃ 4 - 6 months | <input type="checkbox"/> ₆ 2 years or more |

B3. During the past 30 days, how many full 24-hour days were you deployed in the field?

Days (Answer should be between 0 and 30.)

B4. During the past 12 months, how many weeks or parts of weeks were you deployed in the field?

Weeks or parts of weeks (Answer should be between 0 and 52.)

B5. Have you ever been deployed or stationed overseas?

- ☐ ₁ Yes
- ☐ ₂ No → **GO TO QUESTION B13 ON PAGE 8**

B6. What is the longest you have been deployed or stationed overseas?

- | | |
|---|---|
| <input type="checkbox"/> ₁ Less than 1 month | <input type="checkbox"/> ₄ 7 - 12 months |
| <input type="checkbox"/> ₂ 1 - 3 months | <input type="checkbox"/> ₅ 1 year - 1 year and 11 months |
| <input type="checkbox"/> ₃ 4 - 6 months | <input type="checkbox"/> ₆ 2 years or more |

B7. How much of a problem was it for you to get someone to take care of your child/children under age 18 while you were overseas?

- ☐₁ No or little problem
☐₂ A moderate problem
☐₃ Very much of a problem
☐₄ Had no children under 18 at the time → **GO TO QUESTION B10**
☐₅ Took child/children with me → **GO TO QUESTION B10**

B8. When was it that you had to make arrangements for child care while you were deployed or stationed overseas?

- ☐₁ Within the past 5 years
☐₂ More than 5 years ago

B9. How much practical help did your superior officers give you in dealing with your need for child care when you were deployed or stationed overseas?

- ☐₁ A lot
☐₂ Somewhat
☐₃ Very little
☐₄ None

B10. Have you ever been either deployed or stationed in a war zone or an area of hostile action such as a peace-keeping action?

- ☐₁ Yes
☐₂ No → **GO TO QUESTION B12 ON PAGE 8**

B11. Were you deployed/relocated to serve in the following locations during the time periods indicated? **(Mark all that apply.)**

- ☐ ₁ Vietnam (March 1962 - January 1973)
- ☐ ₂ Grenada (October 1983 - November 1983)
- ☐ ₃ Panama (December 1989 - January 1990)
- ☐ ₄ Southwest Asia (August 1990 - April 1991)
- ☐ ₅ Somalia (December 1992 - March 1994)
- ☐ ₆ Macedonia (July 1993 - November 1997)
- ☐ ₇ Haiti (September 1994 - November 1997)
- ☐ ₈ Bosnia (December 1995 - present)
- ☐ ₉ Other war zone or hostile action zone **(Please write in location and dates below.)**

A. _____

B. _____

C. _____

B12. Have you ever been deployed or stationed in any other location where you were in serious physical danger of being shot or otherwise attacked by individuals in the local population?

- ☐ ₁ Yes
- ☐ ₂ No

Now we'd like to learn generally about your morale and the morale of your unit.

B13. How would you rate your current level of morale?

- | | |
|---|--|
| <input type="checkbox"/> ₁ Very high | <input type="checkbox"/> ₄ Low |
| <input type="checkbox"/> ₂ High | <input type="checkbox"/> ₅ Very low |
| <input type="checkbox"/> ₃ Moderate | |

B14. How would you rate the current level of morale in your unit?

☐₁ Very high

☐₄ Low

☐₂ High

☐₅ Very low

☐₃ Moderate

B15. How would you rate the current level of morale among women in your unit?

☐₁ Very high

☐₄ Low

☐₂ High

☐₅ Very low

☐₃ Moderate

C. Support and Stress in Your Job

Below is a list of things that might describe a person's job. Mark an ☒ in one box on each line for whether the item is very true, somewhat true, not very true, or not at all true of your current Army job.

	Very true ▼	Some- what true ▼	Not very true ▼	Not at all true ▼	Don't know ▼
C1. I am free from conflicting demands on my job . . .	<input type="checkbox"/> ₁ . . .	<input type="checkbox"/> ₂ . . .	<input type="checkbox"/> ₃ . . .	<input type="checkbox"/> ₄ . . .	<input type="checkbox"/> ₅
C2. I have a lot of say over what happens on my job .	<input type="checkbox"/> ₁ . . .	<input type="checkbox"/> ₂ . . .	<input type="checkbox"/> ₃ . . .	<input type="checkbox"/> ₄ . . .	<input type="checkbox"/> ₅
C3. My job requires me to work at a fast pace	<input type="checkbox"/> ₁ . . .	<input type="checkbox"/> ₂ . . .	<input type="checkbox"/> ₃ . . .	<input type="checkbox"/> ₄ . . .	<input type="checkbox"/> ₅
C4. My job requires me to work very hard	<input type="checkbox"/> ₁ . . .	<input type="checkbox"/> ₂ . . .	<input type="checkbox"/> ₃ . . .	<input type="checkbox"/> ₄ . . .	<input type="checkbox"/> ₅
C5. My job allows me freedom to decide how I do my own work	<input type="checkbox"/> ₁ . . .	<input type="checkbox"/> ₂ . . .	<input type="checkbox"/> ₃ . . .	<input type="checkbox"/> ₄ . . .	<input type="checkbox"/> ₅
C6. On my job I make a lot of decisions on my own .	<input type="checkbox"/> ₁ . . .	<input type="checkbox"/> ₂ . . .	<input type="checkbox"/> ₃ . . .	<input type="checkbox"/> ₄ . . .	<input type="checkbox"/> ₅
C7. On my job I get to take part in making decisions that affect me	<input type="checkbox"/> ₁ . . .	<input type="checkbox"/> ₂ . . .	<input type="checkbox"/> ₃ . . .	<input type="checkbox"/> ₄ . . .	<input type="checkbox"/> ₅
C8. I am asked to do excessive amounts of work	<input type="checkbox"/> ₁ . . .	<input type="checkbox"/> ₂ . . .	<input type="checkbox"/> ₃ . . .	<input type="checkbox"/> ₄ . . .	<input type="checkbox"/> ₅
C9. I have enough time to get the job done	<input type="checkbox"/> ₁ . . .	<input type="checkbox"/> ₂ . . .	<input type="checkbox"/> ₃ . . .	<input type="checkbox"/> ₄ . . .	<input type="checkbox"/> ₅
C10. My duty day is often longer than 8½ hours	<input type="checkbox"/> ₁ . . .	<input type="checkbox"/> ₂ . . .	<input type="checkbox"/> ₃ . . .	<input type="checkbox"/> ₄ . . .	<input type="checkbox"/> ₅
C11. I change shifts relatively often	<input type="checkbox"/> ₁ . . .	<input type="checkbox"/> ₂ . . .	<input type="checkbox"/> ₃ . . .	<input type="checkbox"/> ₄ . . .	<input type="checkbox"/> ₅
C12. I often have to take an extra shift for someone else who is absent in addition to my regular shift	<input type="checkbox"/> ₁ . . .	<input type="checkbox"/> ₂ . . .	<input type="checkbox"/> ₃ . . .	<input type="checkbox"/> ₄ . . .	<input type="checkbox"/> ₅
C13. Equipment that I use is designed for men and is very difficult and/or dangerous for a woman to operate	<input type="checkbox"/> ₁ . . .	<input type="checkbox"/> ₂ . . .	<input type="checkbox"/> ₃ . . .	<input type="checkbox"/> ₄ . . .	<input type="checkbox"/> ₅
C14. The equipment we use is inadequate, works poorly, or there is a shortage of equipment	<input type="checkbox"/> ₁ . . .	<input type="checkbox"/> ₂ . . .	<input type="checkbox"/> ₃ . . .	<input type="checkbox"/> ₄ . . .	<input type="checkbox"/> ₅
C15. Fumes, noise, and/or other unpleasant environ- mental factors make the location where I work very physically stressful	<input type="checkbox"/> ₁ . . .	<input type="checkbox"/> ₂ . . .	<input type="checkbox"/> ₃ . . .	<input type="checkbox"/> ₄ . . .	<input type="checkbox"/> ₅
C16. There are some aspects of my job that are physically dangerous	<input type="checkbox"/> ₁ . . .	<input type="checkbox"/> ₂ . . .	<input type="checkbox"/> ₃ . . .	<input type="checkbox"/> ₄ . . .	<input type="checkbox"/> ₅

C17. In general, how well would you say that your job measures up to the sort of job you wanted when you joined?

- | | |
|---|---|
| <input type="checkbox"/> ₁ Very much like the job I wanted | <input type="checkbox"/> ₃ Not very much like the job I wanted |
| <input type="checkbox"/> ₂ Somewhat like the job I wanted | <input type="checkbox"/> ₄ Don't know |

C18. Taking everything into consideration, how satisfied would you say you are with your work assignment?

- | | |
|---|---|
| <input type="checkbox"/> ₁ Very satisfied | <input type="checkbox"/> ₄ Very dissatisfied |
| <input type="checkbox"/> ₂ Somewhat satisfied | <input type="checkbox"/> ₅ Don't know |
| <input type="checkbox"/> ₃ Somewhat dissatisfied | |

C19. Is your own immediate supervisor male or female?

- ☐ ₁ Male
- ☐ ₂ Female
- ☐ ₃ Multiple supervisors/men & women
- ☐ ₄ I have no supervisor → **GO TO QUESTION C30 ON PAGE 13**
- ☐ ₅ Don't know

Below are some more statements about the people you work with at your military job.

Please mark an ☒ in one box on each line for how true each statement is for the place that you work.

	Very true ▼	Some- what true ▼	Not very true ▼	Not at all true ▼	Don't know ▼
C20. Supervisors are very concerned about the welfare of those who work under them ..	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
C21. Supervisors encourage soldiers to work as a team	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
C22. Job decisions are applied consistently across all affected soldiers	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
C23. At the place I work we have too little supervision	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
C24. Supervisors are good at their job	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
C25. Supervisors makes negative remarks about women's performance and abilities	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
C26. Supervisors often make unreasonable or unrealistic demands of soldiers	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
C27. Does the supervisor you work with most often give substantially more <u>opportunities</u> to men or to women?					
<input type="checkbox"/> ₁	More opportunities to men				
<input type="checkbox"/> ₂	More opportunities to women				
<input type="checkbox"/> ₃	Treated the same				
<input type="checkbox"/> ₄	Don't know				

C28. Does the supervisor you work with most often give substantially more rewards to men or women?

- ☐ ₁ To men
- ☐ ₂ To women
- ☐ ₃ Treated the same
- ☐ ₄ Don't know

C29. Does your supervisor give substantially more criticism to men or to women?

- ☐ ₁ To men
- ☐ ₂ To women
- ☐ ₃ Treated the same
- ☐ ₄ Don't know

Now let's turn to something a little different.

C30. Do you have formal supervisory responsibilities over other soldiers or civilian employees?

- ☐ ₁ Yes
- ☐ ₂ No → **GO TO QUESTION C33 ON PAGE 14**

C31. About how many people do you directly supervise? **(If unsure, give your best guess.)**

- ☐ ₁ 1 person
- ☐ ₂ 2 people
- ☐ ₃ 3 - 4 people
- ☐ ₄ 5 - 9 people
- ☐ ₅ 10 - 25 people
- ☐ ₆ 26 - 99 people
- ☐ ₇ 100 or more people

- C32. How easy or difficult is it to get the following types of personnel that you supervise to carry out your orders in a satisfactory way? (Mark an ☒ in one box on each line.)

	Very easy ▼	Some- what easy ▼	Neither easy nor diffi- cult ▼	Some- what difficult ▼	Very difficult ▼	Don't supervise these personnel ▼
a Relatively new soldiers ...	<input type="checkbox"/> 1 ...	<input type="checkbox"/> 2 ...	<input type="checkbox"/> 3 ...	<input type="checkbox"/> 4 ...	<input type="checkbox"/> 5 ...	<input type="checkbox"/> 6
b Long-term soldiers	<input type="checkbox"/> 1 ...	<input type="checkbox"/> 2 ...	<input type="checkbox"/> 3 ...	<input type="checkbox"/> 4 ...	<input type="checkbox"/> 5 ...	<input type="checkbox"/> 6
c Female soldiers	<input type="checkbox"/> 1 ...	<input type="checkbox"/> 2 ...	<input type="checkbox"/> 3 ...	<input type="checkbox"/> 4 ...	<input type="checkbox"/> 5 ...	<input type="checkbox"/> 6
d Male soldiers	<input type="checkbox"/> 1 ...	<input type="checkbox"/> 2 ...	<input type="checkbox"/> 3 ...	<input type="checkbox"/> 4 ...	<input type="checkbox"/> 5 ...	<input type="checkbox"/> 6
e Civilians	<input type="checkbox"/> 1 ...	<input type="checkbox"/> 2 ...	<input type="checkbox"/> 3 ...	<input type="checkbox"/> 4 ...	<input type="checkbox"/> 5 ...	<input type="checkbox"/> 6
f Deployed male soldiers ...	<input type="checkbox"/> 1 ...	<input type="checkbox"/> 2 ...	<input type="checkbox"/> 3 ...	<input type="checkbox"/> 4 ...	<input type="checkbox"/> 5 ...	<input type="checkbox"/> 6
g Deployed female soldiers ..	<input type="checkbox"/> 1 ...	<input type="checkbox"/> 2 ...	<input type="checkbox"/> 3 ...	<input type="checkbox"/> 4 ...	<input type="checkbox"/> 5 ...	<input type="checkbox"/> 6
h Officers	<input type="checkbox"/> 1 ...	<input type="checkbox"/> 2 ...	<input type="checkbox"/> 3 ...	<input type="checkbox"/> 4 ...	<input type="checkbox"/> 5 ...	<input type="checkbox"/> 6

- C33. Not counting supervisors or people you may supervise, is there a group of people that you think of as your co-workers? That is, personnel with whom you work closely on your Army job?

☐ 1 Yes

☐ 2 No

C34. About how many co-workers would you say are in this group? **(If unsure, give your best guess. Mark one box only.)**

- ☐ ₁ 1 co-worker → **GO TO QUESTION C36 ON PAGE 16**
- ☐ ₂ 2 co-workers
- ☐ ₃ 3 - 4 co-workers
- ☐ ₄ 5 - 9 co-workers
- ☐ ₅ 10 - 25 co-workers
- ☐ ₆ 26 - 99 co-workers
- ☐ ₇ 100 or more co-workers

C35. In your workgroup are most of the personnel women, men, or are there about an equal number of men and women?

- | | |
|--|--|
| <input type="checkbox"/> ₁ Most/all are women | <input type="checkbox"/> ₃ About the same |
| <input type="checkbox"/> ₂ Most/all are men | <input type="checkbox"/> ₄ Don't know |

The next questions are about your co-workers. In answering these questions, please think only about your co-workers. Do not include your supervisors or any soldiers or civilians you may supervise. For each of these statements, please mark an ☒ in the box for whether the statement is very true, somewhat true, not very true, or not at all true of your co-workers.

	Very true ▼	Some- what true ▼	Not very true ▼	Not at all true ▼	Don't know ▼
C36. In general, your co-workers are motivated to do a good job	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
C37. In general, your co-workers are not doing their share of the work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
C38. There is at least one co-worker with whom you have serious conflicts	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
C39. At least some of your co-workers are friendly to you	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
C40. At least some of your co-workers are willing and able to give you useful advice on how to solve your job-related problems	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
C41. At least some of your co-workers take a personal interest in you	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
C42. You can rely on at least some of your co-workers when things get tough at work ...	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
C43. At least some of your co-workers are helpful to you in getting your job done	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
C44. You feel appreciated by at least some of your co-workers	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
C45. At least some of your co-workers are willing to provide help with your personal problems	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
C46. Are any of your co-workers civilian personnel?					
<input type="checkbox"/> 1 Yes					
<input type="checkbox"/> 2 No → GO TO QUESTION C51 ON PAGE 17					

Thinking now of only your civilian co-workers, mark an ☒ in the box for whether the statement is very true, somewhat true, not very true, or not at all true of your co-workers.

	Very true ▼	Some- what true ▼	Not very true ▼	Not at all true ▼	Don't know ▼
C47. In general, your civilian co-workers are motivated to do a good job	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄ ..	<input type="checkbox"/> ₅
C48. In general, your civilian co-workers are not doing their share of the work	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄ ..	<input type="checkbox"/> ₅
C49. There is at least one civilian co-worker with whom you have serious conflict	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄ ..	<input type="checkbox"/> ₅
C50. At least some of your civilian co-workers are friendly to you	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄ ..	<input type="checkbox"/> ₅
C51. In your job, how does the amount of assistance and support you receive from your female co-workers compare with that you receive from your male co-workers?					
<input type="checkbox"/> ₁	Females give much more assistance and support				
<input type="checkbox"/> ₂	Females give somewhat more assistance and support				
<input type="checkbox"/> ₃	Females and males give about the same amount of assistance and support				
<input type="checkbox"/> ₄	Males give somewhat more assistance and support				
<input type="checkbox"/> ₅	Males give much more assistance and support				
<input type="checkbox"/> ₆	Only have male co-workers/Only male co-workers in a position to assist				
<input type="checkbox"/> ₇	Only have female co-workers/Only female co-workers in a position to assist				

D. Other Stressors

In this section we will ask you about many different kinds of experiences that can be stressful.

Stressful Life Events

We are going to ask you about a number of different types of stressors that happen to people. We will start with events that happen relatively infrequently in a person's lifetime, such as divorce or the loss of a loved one. Some of these events can be positive but nonetheless stressful, like having a baby. For each of these statements, please mark an ☒ in the yes or no box.

D1. During the past 12 months, did each of the following happen to you?

	Yes ▼	No ▼
a You got engaged	<input type="checkbox"/> 1	<input type="checkbox"/> 2
b You got married	<input type="checkbox"/> 1	<input type="checkbox"/> 2
c You moved into a different home or apartment	<input type="checkbox"/> 1	<input type="checkbox"/> 2
d You and your lover moved in together	<input type="checkbox"/> 1	<input type="checkbox"/> 2
e You had a baby	<input type="checkbox"/> 1	<input type="checkbox"/> 2
f You adopted a child	<input type="checkbox"/> 1	<input type="checkbox"/> 2
g Someone else moved into your household	<input type="checkbox"/> 1	<input type="checkbox"/> 2
h A loved one died	<input type="checkbox"/> 1	<input type="checkbox"/> 2
i A member of your household or family became seriously ill	<input type="checkbox"/> 1	<input type="checkbox"/> 2
j You got a divorce or had an important relationship end	<input type="checkbox"/> 1	<input type="checkbox"/> 2
k You separated for a few weeks or longer from your spouse, lover, or partner	<input type="checkbox"/> 1	<input type="checkbox"/> 2
l Someone (else) moved out of your household	<input type="checkbox"/> 1	<input type="checkbox"/> 2
m Your financial situation got substantially worse	<input type="checkbox"/> 1	<input type="checkbox"/> 2
n You had a major job change	<input type="checkbox"/> 1	<input type="checkbox"/> 2
o You moved to a different installation	<input type="checkbox"/> 1	<input type="checkbox"/> 2
p Your husband, lover, or partner had an affair with someone else	<input type="checkbox"/> 1	<input type="checkbox"/> 2
q A child of yours got into serious trouble	<input type="checkbox"/> 1	<input type="checkbox"/> 2

	Yes ▼	No ▼
r You were deployed/stationed overseas	<input type="checkbox"/> ₁ ...	<input type="checkbox"/> ₂
s You had a serious problem with a close friend or neighbor	<input type="checkbox"/> ₁ ...	<input type="checkbox"/> ₂
t You had serious legal problems	<input type="checkbox"/> ₁ ...	<input type="checkbox"/> ₂
u Something that was very valuable to you was stolen	<input type="checkbox"/> ₁ ...	<input type="checkbox"/> ₂
v You were promoted	<input type="checkbox"/> ₁ ...	<input type="checkbox"/> ₂
w You were stationed away from your spouse or your children under age 18 for a few weeks or longer	<input type="checkbox"/> ₁ ...	<input type="checkbox"/> ₂

D2. Which of the events in items D1a-D1w was the most stressful? (**Place the letter of the most stressful event in the first box below.**)

₁ Letter of item that was most stressful

☐₂ No events were stressful

☐₃ Don't know

D3. In the past 12 months have you received any kind of public assistance such as food stamps or welfare?

☐₁ Yes

☐₂ No

- D4. During the past 12 months, did you have enough money each month to cover each of the following? Please mark an ☒ in the box of the response which best describes your situation.

	No ▼	Some- times ▼	Yes ▼	No young child ▼
a Food	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	
b Clothing	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	
c Housing	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	
d Transportation	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	
e Fun—like seeing a movie or eating in a restaurant	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	
f Child care	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

APPENDIX E
FREQUENTLY ASKED QUESTIONS

INFORMATION SHEET FOR THE STUDY OF WOMEN IN THE ARMY WALTER REED ARMY MEDICAL CENTER

GOAL

This study is being conducted by the Research Triangle Institute (RTI), a private, not-for-profit research organization. The study is being funded by a grant from the U.S. Army Medical Research, Development, Acquisition, and Logistics Command. **The purpose and primary goal of the study is to help us better understand what is most stressful for Army women in their military lives, and what they find most helpful in carrying out their duties and living fulfilling lives.** Based on the findings of the research, RTI will make recommendations to the Army about how to reduce stress and its effects and improve morale and performance for active duty and Reserve Army women.

You are requested to assist with this study by completing an anonymous survey. An RTI staff member will be in the room with you in case you have any questions but will not observe your responses to the questions in the questionnaire. The survey usually takes about 1 hour to complete. The survey includes questions about difficulties women soldiers and officers face, and the things they find most helpful to them in their lives and duties in the Army. It also asks a few questions about women's lives before they entered the Army.

VOLUNTARY PARTICIPATION **WOMEN'S PARTICIPATION IS** **COMPLETELY VOLUNTARY.**

We will not tell your Commander, supervisor, or anyone at the installation if you choose to participate or not. Your participation is important to the study, but you are free to leave if they do not want to complete the survey. You may also refuse to participate at any later point without suffering any penalty or losing any benefits to which you are entitled. If you choose to complete the survey, **YOU HAVE THE RIGHT TO DECLINE TO ANSWER ANY**

OR ALL QUESTIONS IN THE SURVEY.

ANONYMITY

The survey is anonymous. YOU SHOULD NOT WRITE YOUR NAME OR ANY OTHER IDENTIFYING INFORMATION ON THE SURVEY.

RISKS

The survey involves answering questions about yourself and your military experience. We think there will be minimal risk to women who participate. It is possible that a few questions may bring up memories from the past which would make women upset or sad. You may feel that some questions are sensitive or that some of them are offensive to you. If you feel upset about the sensitive questions in the survey and would like counseling or need to talk to someone please follow the usual procedures for obtaining counseling for mental health problems at your installation.

QUESTIONS

If there are questions about the study, please call Dr. Kathleen Jordan at RTI, 1-800-334-8571, ext. 6410. If you have any questions about your rights as a research subject, you may call Dr. Wendy Visscher at RTI, 1-800-334-8571, ext. 6028.

USAR - 8/13/98

APPENDIX F
PROCTOR GUIDE

PROCTOR GUIDE

SURVEY OF STRESSORS AND THEIR IMPACTS ON WOMEN IN THE ARMY AND RESERVES

11/10/98

Background

Research Triangle Institute (RTI) in North Carolina is currently conducting a study under contract to the U.S. Army Medical Research and Materiel Command. As part of the study, we will be administering questionnaires to females in the active duty Army and Reserves. The survey will ask women about people, events, and activities that can be stressful and about other effects of stress. This guide is to provide you with the necessary information you will need to proctor or assistant proctor a questionnaire administrative session.

Sample

We will sample women from all racial and rank categories in the Army and Reserves whose occupations fall under the broad headings of Supply, Administration, Medical, and Signal. We have identified Regional Support Commands (RSCs) that have a high concentration of women in those four types of occupations. Each of those RSCs are identifying Units and locations that can support our need to survey between 100 and 200 women on a given weekend. The women we have selected are also representative of the larger population of Army and Reservists in terms of rank and race. We are surveying both officers and enlisted women, which is why you will not hear us refer to respondents as "soldiers" throughout this document (officers are not referred to as "solider").

Confidentiality

This survey is completely confidential. The ID number, which will be affixed to the questionnaire upon receipt at RTI, will not identify the individuals who completed the questionnaire. You should not write a woman's name anywhere on the questionnaire. Additionally, you should not discuss the name of any one person who completed the survey.

There should be no military staff person monitoring the administration of the survey on-site. No military staff should be "posted" to ensure women attend or stay. This issue should be confirmed before the administration begins. If your contact person would like to stop by and check in with you at the beginning and end to make sure you do not require any assistance, that is OK, but try to prevent them from staying in the administration room and looking around at who is present. In addition, you will not provide information to the supervisors, contact person, commander, or anyone else in the military on whom attended and who did not. This is part of the agreement that should be set forth with the site before you arrive.

Before You Arrive

A team of RTI staff will conduct each administration. One of the pair should be designated as the lead Proctor; the other is the assistant Proctor. The Lead is responsible for ensuring all logistics are set, that the administration is conducted properly, and is the person who will provide the introduction to the survey during the administration (unless otherwise assigned). The assistant proctor is responsible for assisting in any and all activities related to the administration. One member of the team should call the site contact to set up all logistics well in advance of the administration date. One member also must call the contact the week prior to the administration and:

- confirm the number of women expected;
- discuss how women will be called to the administration location (if the contact has no ideas how best to divide the women up, you could recommend that they divide women by last name whereby A-N go to admin #1 and M-Z to admin #2);
- ensure the administration room is reserved and is unlocked one hour before and during the time of the administration, and is of adequate size and privacy;
- remind the contact that the survey administration is confidential and there should be no military staff stationed at the room monitoring who is in attendance;
- remind the contact that we will not provide a list of who completed surveys;
- ensure that your directions to the contact person's office are accurate, and confirm the time of your initial meeting with the contact the day before the survey administration;
- find out from the contact person if you need special permission to get on base or into a building, and if you need a parking permit to park on base;
- arrange for how the fed ex boxes will be returned to Diana Sierra at RTI- RTP is...Fed Ex able to pick up on Sat or Sunday at the site, can you drop the boxes off at the mail room on post, should you arrange for the hotel to send them for you, will you check them as luggage on your plane, etc.; and
- confirm that you have received the demographic data on the women who are in the Unit being surveyed, sorted by race, then rank, then PMOS (if not, encourage your contact to fax the information to you before you go on-site). Be sure the original of the data goes to Nancy Braxton in RTP and keep a copy for your records.

A few days before the administration date, the team is responsible for gathering and sending/bringing all materials. Each member of the team should bring with them in the car or on the plane:

- directions to the site
- site contact's name and phone number
- time for each administration
- location of, phone number to, and confirmation for hotel
- one camera-ready copy of the questionnaire and information sheet (in case you need more copies or in case something happens to the box you send)
- a photo ID to show in case you are required to show one while on post
- a small pair of scissors or small Swiss Army knife to open boxes (please do not bring a large pair of scissors or knife on the plane with you!!!)

One member of the team should send two days in advance the boxes containing:

- information sheets
- questionnaires
- pens
- pre-addressed RTI fed ex labels and fed ex envelopes to stick on boxes (at least four will be required).
- very strong packing tape
- two 8.5" X 11" signs designed on a computer in extra large font that say "Meeting In Progress – Please Do Not Disturb"

You should verify that your contact is willing and able to be responsible for receiving the boxes of materials ahead of time and keeping them in a secure location until your arrival. Call the day after the fed ex boxes has been sent to ensure the boxes have arrived. If they have not, send a back-up set.

When You Arrive

Plan to arrive at the survey site the day before the first administration so that you can find the location, meet the contact, and ensure the facility is adequate and all logistics have been confirmed. Go to the contact's office, confirm the receipt of the boxes, arrange to have the boxes brought to your car, and go with the contact to visit the room where you will administer the survey to familiarize yourself with the layout. If needed, arrange to have the room set up the way you want it so that on the day of administration you can begin immediately (either arrange it yourself if it is a small job or ask your contact to have someone help you). Remember that to ensure privacy and confidentiality, women should be seated with ample space between them so that they cannot easily read the survey of the woman closest to them. Ask your contact if you

should re-arrange the room yourself before leaving or if you should leave it as is. Also find out where the restrooms are and any drink machines. Arrange to get an empty box or two for the surveys to be placed into when the respondents are finished. These boxes can also be used to send the surveys back to RTI.

Administration of the Surveys

The day of the administration, arrive at the survey location one-hour prior to administration. Make sure the room is set up with tables or desks and chairs enough for the number of women you are expecting. Place an information sheet and a pen at each place. Have a stack of surveys ready to pass out to women. Ensure that the lighting is good and that the room is as private as possible.

As women arrive, ask them to sit at a seat with an information sheet and to begin reading the sheet. Do not wait more than 10 minutes after the administration time before beginning. Introduce the survey using something similar to the script below.

Introductory Script

“Hi, my name is [NAME] and this is [ASSISTANT TEAM MEMBER] from the Research Triangle Institute. RTI is a civilian, private, non-profit research organization who has been given a grant and approval from the Department of the Army to conduct a survey of 1,600 active Duty Army and Reservist women. The goal of this study is to inform the military about the causes and effects of stress on military women’s lives. Today we will be asking you to fill out a survey which is the first of its kind in that it focuses on Army and Reservist women and the stress that they experience in their lives and their work. The research team includes military consultants, and the researchers have conducted focus groups with women just like yourselves to be sure that the survey fits the way you think as military women.

We’ve chosen women to participate in this study based on their units and the jobs they hold. We are primarily interested in surveying women who are in medical, administrative, supply, and signal occupations. We’ve chosen units based on their locations, demographic make-up of the women, and their concentration of women in these occupations. If you don’t fit one of those categories, that’s OK. If any of your female military friends hear about the survey and wonder why they were not chosen it was probably due to the numbers of women we already had or the occupational make-up of their unit.

Each person should have an information sheet in front of them. If you haven’t read it yet, please do so now. It provides important information about this study, and a few phone numbers at the bottom in case you want to contact one of the researchers about this study or your rights as a study participant. I’d just like to reiterate some points that are covered on the information sheet and give you a little more information before we begin.

First, let me assure you that this survey is completely voluntary. I know you were ordered to come here today, but you are free to leave if you choose or to stay and choose to not answer any questions you do not want to answer. But because we need to hear from women like you, and it is your personal experiences we are interested in, we hope you will agree to stay and fill out the entire survey. No one in the military or at RTI will be notified regarding which women stay and whether anyone leaves.

Before I go any further, I want to reiterate that this survey is for active duty Army women and weekend duty Reservists, only. Is anyone here AGR? **[IF ANYONE SAYS YES, SAY:** As much as we appreciate that you are here, this survey is not designed for you. Because we know that women who are AGR have very different military work situations than weekend-duty Reservists, women who are AGR will not be asked to fill out this survey. You are free to leave at this time, but again, thank you for coming.]

As you read, RTI takes confidentiality in its surveys very seriously. The answers you provide if you choose to stay will be kept strictly confidential. There are no identifiers on the survey, and we ask that you do not write your name on any part of the survey. The only people who will ever see these surveys are the researchers at RTI, and, even then, because there are no names on the surveys, they will never know what any individual said.

At the end of the project, the researchers will write a report for the Department of the Army. The report will provide "aggregate data"; that is, we will summarize results across the entire group of 1,600 women. For example, we might report what percentage of women with young children said they had difficulty finding affordable childcare and how this percentage differed by rank. No individual woman, unit, or state will be linked with any responses. We plan to forward copies of the report to your Commander at the end of the project. We will request that each Commander make the report available to all of the members of your unit. We anticipate that the RTI report will be available early in the Year 2000.

We are here today to answer any questions you may have about how to take the survey. I am not allowed to tell you how to answer a question, however. If you're not sure which response to mark, please mark the answer that best describes your situation. Try to give your best estimate. If you are still not satisfied, you may write your preferred answer in the margin next to the answer you marked. Although I cannot help you answer any questions, I can try to help you if you have questions about how to mark the survey or what to do with the survey when you are done.

The survey takes most women between 40 minutes and an hour and a half. You have been approved by your Commander to stay for up to an hour and a half, so please do not feel rushed if other women leave before you. Every woman's life situation is different, and that will affect the amount of time it takes to complete the survey. When you are done with your survey, please record on the last page the length of time it took you to complete the survey. This is important so that we can monitor how long women are spending answering these questions. Also, we ask that you please take the information sheet you just read with you when you leave. There are two names and phone numbers at the bottom of the page in case you need to contact

one of the researchers today or any time in the future with questions or comments regarding the survey. Then bring your survey and your pen to the front and place them in the box before you leave. You are free to leave as soon as you complete the survey.

You are free to get up and use the rest room if needed while you are completing the survey. The nearest rest room is [IDENTIFY LOCATION]. Finally, before you begin, be sure to read the front cover of the questionnaire - it will explain a little more about the study and how to fill out the questionnaire. Does anyone have any questions before we begin?

I want to thank you all in advance for filling out this survey. We really appreciate your participation.”

.....

After the Introduction

Right after the introduction, the Proctor and Assistant Proctor should pass out one survey to each person, sit down, and wait for all surveys to be completed. Try not to get up and walk around until the last person is done unless you have to. It can be distracting for respondents if they perceive that you are anxious for them to finish. If women are still filling out the survey after the hour and a half is over, you should notify them of the time and encourage them to stay if they think their supervisor will not mind. If they choose to leave without finishing the survey, ask them to write a note where they ended that says they ran out of time and had to return to their work.

Latecomers

In case of latecomers, greet them quietly at the door when they arrive and ask them to verify that they are not AGR. Hand them an information sheet, a pen, and a survey. Ask them to read the information sheet before filling out the survey and tell them you are available to answer any questions they may have.

At the end of each day and shipping the surveys back to RTI

After the last administration, the room should be as it was originally found, if the contact indicates that it should be. Collect all materials from the room including blank information sheets, blank surveys, pens, and any other items you brought. Place all of the completed surveys in a box (blank surveys can go in the box as well, as long as they are clearly separate from the completes), seal it with plenty of tape, and put the completed fed ex label in the fed ex plastic envelope on the box. You should have previously arranged for the mode of delivery of boxes

back to Diana Sierra. We recommend one of the following arrangements: 1) pre-arrange a fed ex pick up at the post a half hour after the last administration time is over; 2) identify a fed ex office that is open so you can drop the boxes off directly; 3) locate the mail room on post if they are open that day and hand carry the boxes over; 4) arrange to have the hotel at which you are staying fed ex it; or 5) carry the boxes on the plane with you as checked luggage. Regardless, please have the box sent from the contact person's name and address to Diana Sierra in the RTI-RTP office at 3040 Cornwallis Rd., Hobbs Bldg., Rm. 212, RTP, NC, 27709-2194. Diana's phone number is 919/541-6436. Please put that on the label as well as the project number 6729-000.

You must safeguard completed questionnaires. Do not leave any of the completed surveys unattended at any time. If you have a break between administrations and you leave the administration room, place all completed surveys in your locked car. The surveys should not be released to anyone other than RTI project staff.

Checklist for Data Collection

Before you leave home:

- Confirm location and directions to base
- Check supplies
 - directions to site and contact information (bring with you)
 - camera-ready copy of questionnaire and information sheet (bring with you)
 - information sheets
 - questionnaires
 - pens
 - fed ex labels and fed ex envelopes with RTI account number and Diana Sierra's address and phone number

When you reach the base the day prior to administration:

- Meet contact person at designated time and location
- Arrange for boxes of supplies to be brought to your rental car
- Ask contact person to show you the designated survey location

At the survey administration room the day of the administration:

- Have the room arranged before a half-hour before administration begins.
- Have an information sheet and pen at every seat you wish people to take.
- When women arrive:
 - greet each person and ask them to sit at one of the seats with an information sheet and start reading the sheet.
 - read introduction script to women
- After women have finished with the questionnaire:
 - make sure they have placed the questionnaire and pen in the box
 - encourage women to take the information sheet with them

Before you leave the base:

- Collect remaining information sheets and pens from tables
- Ensure the room is neat and set up the way it was before administration
- Pack the questionnaires in a box, tape, fill out fed ex label, and have them send to Diana Sierra in the NC office.
- Check in with your contact before you leave to thank them and to let them know you appreciate their help.

Possible Questions You May Be Asked

1. “Why are you asking such personal questions?”

The purpose of the study is to identify issues that are related to stressors for women in the military. The kinds of problems people might be experiencing impact the kinds of services that the military can provide. Remember that this information is confidential and nobody in the Army will know what your individual answers are. In addition, you may skip any question, which you do not feel comfortable answering.

2. “Can I just pick up the questionnaire at the administration location and return it later on?”

We would prefer that the women fill the questionnaire out at the administration location. This way you can make sure she actually completes it. If the woman refuses to complete it at that location, thank her for coming and allow her to leave. Make a note of the fact that someone refused. Use no names.

3. “My MOS is not listed on pages 3-5. Which answer choice should I mark?”

I’m sorry but I can’t tell you which of the answer choices to choose, so try to decide which choice is closest to your MOS and mark that one. Then, you can write in the margin your actual MOS if you think that will make your answer clearer.

4. “What if I am a civilian Army staff for my weekday job but I’m also a reservist one weekend a month. How do I answer these questions?”

This Reservist survey is asking about your experiences as a woman who is also a reservist. That includes your daily life outside of your weekend duty, so you’ll be reporting on your daily job just as other women will. The fact that you work for the Army during the week may make some of the questions confusing for you to answer, but just keep in mind that the questions are asking about you as a reservist woman, not as a woman who works for the Army on weekdays.

5. “I object to the questions on this survey. I want to file a complaint.”

I appreciate your concerns. Although I am not authorized to discuss specifics of the survey with you, the numbers on the information sheet will put you in touch with people who can.

6. “I’d like to keep a copy of the survey.”

I’m sorry, but I am not authorized to release blank copies of surveys to anyone while the period of data collection is ongoing. If you would like to contact one of the people listed on the information sheet, you might be able to get a copy after data collection is complete.

Glossary of Terms

PMOS (or MOS)	Primary Military Occupational Specialty
AGR	Active Guard and Reserve
RSC	Regional Support Command
CO	Commanding Officer
XO	Executive Officer

APPENDIX G
IRB APPROVAL

Minutes of the
Committee for the Protection of Human Subjects
IRB No. 2
Research Triangle Institute
June 1, 1999

Study: The Nature and Outcome for Women of Stressors Associated with Military Life

Project No.: 53U-6729

Project Leader: Kathleen Jordan

Type of Review: Renewal

Primary Reviewer: James H. Raymer, Ph.D.

Diana Sierra attended for the project.

Members present: Lisa J. Gilliland, Jerome S. Harris, Janice E. Kelly, William P. J. Peete,
James H. Raymer, Timothy K. Smith, Tim C. Wilcosky, and John A.
Fairbank, Chair.

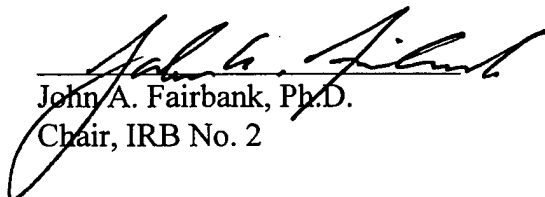
Members absent: Sherri C. Cates and Connie L. Hobbs.

Diana Sierra reported to the IRB for the annual review to renew human subjects approval for the project. Since the project began in 1998, 905 subjects have been enrolled. Data collection continues. The project leader will request a one year no cost extension in November. A question was asked if interviews were conducted with military personnel waiting for deployment. The answer was yes.

In September, 1998, one non-commissioned officer expressed her displeasure with certain sensitive items in the questionnaire. Some of the questions ask about marital infidelity, divorce and sexual harassment. Ms. Sierra reported that potential participants are told up front the kinds of questions in the questionnaire.

Motion: Approve.

Vote: 8-0.


John A. Fairbank, Ph.D.
Chair, IRB No. 2

Copies: Kathleen Jordan
Diana Sierra
IRB No. 2
IRB Chairs

APPENDIX H
OUTCOME MEASURES AND STUDY VARIABLES

Appendix H1. Outcome Domains

Data Collected	Definition	Statistics	New Variable Name
MENTAL HEALTH			
Morale	B13		Very Low: 10% Low: 15% Moderate: 44% High: 21% Very High: 9%
GHQ	sum G6-G33 - scored 0/1	range 0-28; mean 5.677; s.d. 6.06; $\alpha=.93$	GHQ
GHQa: somatic GHQb: anxiety GHQc: Depression GHQd: social dysfunction		($\alpha=.85$); ($\alpha=.90$); ($\alpha=.80$); ($\alpha=.90$)	GHQa GHQb GHQc GHQd
Sleep Problems	sum g2a-g2f	range=1-36; mean=24.49; sd=5.72; $\alpha=.77$	SLEEP
SUBSTANCE USE			
Short MAST	published formula	range 0-25; mean 1.36; sd=2.69; unweighted $\alpha=.57$	MAST_S
Substance use	Recency of Any alcohol problem or drug use/problem	72% never; 20% lifetime; 2.5% past year; 2.6% past month	ALCDRG_R
PERFORMANCE			
See Table 1b.			
Treatment Utilization	H31: # times talk to <i>doctor</i> for any health problem/illness :past 12 months	range 0-100; mean 2.01; sd 4.83	H31
HEALTH PROBLEMS			
Overall Health	G1: General Health	excellent:16%, v good 34%, good;39%, fair:10%, poor:1%	G1
	G34: Health Problems interfere w/ living	no:72%, yes:28%	G34

Data Collected	Definition	Statistics	New Variable Name
High Blood Pressure	G3/G4	88% Never, 4% lifetime, 8% past year	BP
Injuries: work related	H23, H24, H25	no injury: 70%; mild/no doctor:3%; moderate/no doctor: 2%; mild/doctor:7%; moderate/doctor: 14%; severe: 4%	H24
Injuries: home/recreational	H26, H27, H28	no injury: 82%; mild/no doctor:3%; moderate/no doctor: 2%; mild/doctor:6%; moderate/doctor: 6%; severe: 1%	H27
Unable to work	H32/33: # days totally unable to work: 30 days	range 0-30; mean 0.77; sd 3.09	H33
Cut back at work	H37/H38: # days had to cut down on activities: 30 days	range 0-30; mean 2.10; sd 5.40	H38
Unable/cut back (COMBINED) # days unable + # cut back	H32/33 + H37/38 (max 30)	range: 0-30; mean: 2.70; sd: 6.03	UNABCT
Unable/cut back: mental due to emotions, nerves, mental health, alcohol or drugs	H34+H39	range: 0-30; mean: 1.23; sd: 3.59	UNABCT_M
Unable/cut back: injury	H35+H40	range: 0-30; mean: 2.74; sd: 6.47	UNABCT_I
Unable/cut back: other physical health problem	H36+H41 (max 30)	range: 0-30; mean: 3.07; sd: 5.81	UNABCT_P

A rough factor analysis of the above produced 6 interpretable factors:

1. Missed work (H33, H38, UNABCT, UNABCT_I, UNABCT_P)
2. General Health (G1, G34, H31)
3. Mental Health (GHQ, SLEEP(reversed), UNABCT_M)
4. Substance Use (MAST_S, ALCDRG_R)
5. Injuries (H24, H27)
6. Blood Pressure (BP)

If separate components of GHQ are used instead, they all load on mental health factor.

Appendix H2. Performance

Construct	Variables	Statistics
Recommend enlisting?	I1	Advise against: 24% Doubts about recommending: 33% Strongly recommend: 43%
If had to do all over, would join again?	I2	Definitely would not: 18% Second thoughts: 39% Definitely would: 43%
How likely will voluntarily leave next year?	I3	Very likely: 20% Somewhat likely: 19% Not very likely: 22% Not at all likely: 39%
How likely will leave b/c downsizing next year?	I4	Very likely: 4% Somewhat likely: 10% Not very likely: 28% Not at all likely: 57%
Career intentions if not forced out b/c downsizing	I5	Definitely stay until retirement: 32% Probably stay until retirement: 22% Definitely stay beyond present hitch: 7% Probably stay beyond present hitch: 11% Definitely leave after present hitch: 19% Probably leave after present hitch: 9%
Years since received current rank	I6	Less than 1 year: 28% 1 year: 15% 2 years: 18% 3 years: 11% 4 years: 9% 5 years: 6% 7 years: 3% 8 years: 1% 9 or more years: 5%
If remain, how likely to be promoted	I7	N/A-At highest rank in career: 1% N/A-Will retire before eligible: 6% Extremely likely: 49% Somewhat likely: 20% Not sure: 16% Somewhat unlikely: 4% Extremely unlikely: 5%

Construct	Variables	Statistics
Chances for promotion w/i primary CMF or Basic Branch	I8	Much better than others: 16% A little better than others: 21% About the same as others: 44% A little worse than others: 11% Much worse than others: 8%
Received any recognition for outstanding performance	I10	Memorandum of appreciation/commendation: 11% Certificate of appreciation/commendation: 30% Outstanding performance evaluation report: 12% Time off duty for outstanding performance: 18% Military medal or ribbon for outstanding performance: 30%
Receive adverse efficiency report or performance counseling in past 12 months?	I11	No: 80% Yes: 20%
Receive any disciplinary action in past 12 months	I12	No: 95% Yes: 5%
Any concerns of getting adverse efficiency report or disciplinary action in next 12 months?	I13	No: 93% Yes: 7%
Rating on last performance evaluation	I14	Exceeding standards/expectations: 53% Meeting standards/expectations: 45% Below standards/expectations: 2%
Composite performance rating	I7, I8, I11, I12, I13, I14	Range = -8 to 6: mean = 1.54; std dev = 2.62

Appendix H3. Demographics

Construct	Variables	Statistics	
		Enlisted: n=687	Officers: n=189
Age	A1	Mean= 29.46; range=18-55; stdev=8.19	Mean=29.46; range=18-55; stdev=8.19
Years active duty in Army	A2	Mean= 4.75 range= 0-26; stdev= 5.53	Mean= 3.75; range=0.22; stdev= 5.23
Years in Army Reserves	A3	Mean= 4.22; range= 0-25; stdev=6.02	Mean= 9.45; range= 0-24; stdev=6.73
Current rank	A4	E1-E4: 51% E5-E6: 35% E7-E9: 12% Warrant Officers: 1%	O1-O3: 58% O4-O6: 42%
Highest level of education reached	A5	Not HS Grad: 1% HS/GED: 22% Trade/Tech Grad: 6% Some College: 54% College Grad: 10% Post Grad-No Degree: 4% Grad/Professional Deg: 3%	Not HS Grad: 0% HS/GED: 0% Trade/Tech Grad: 0% Some College: 8% College Grad: 33% Post Grad-No Degree: 15% Grad/Professional Deg: 43%
Hispanic?	A6	No: 89% Yes: 11%	No: 91% Yes: 9%
Race	A7	American Indian: 1% Pacific Islander: 1% Black: 50% Asian: 1% White: 30% Other: 9% Multi-Racial: 9%	American Indian: 1% Pacific Islander: 0% Black: 30% Asian: 3% White: 52% Other: 7% Multi-Racial: 6%
Job (Top 5)	B1	Functionl Suport/Admin: 36% Health Care Spec: 27% Servic/Supply Handler: 16% Other Tech/Allied Spec: 5% Elec/Mech Equip Repair: 3%	Health Care: 67% Administrator: 11% Engineering/Maint: 4% Supply/Procurement: 4% Scientist/Professional 4%

Appendix H4. Job Stress

Construct	Definition from Literature	Definition from Item Factor Analyses	Statistics
Job: Control	C1, C2, C5, C6, C7		Range:1-20;stderr=0.12; mean=12.60; α =.78
		C2, C4, C5, C6, C7	Range=3-20;stderr=0.12; mean=11.89; α =.76
Job: Demand	C3, C4, C8, C9		Range=1-16; stderr=0.07; mean=8.93; α =.74
		C1, C3, C4, C8, C9, C10	Range=1-24; stderr=0.09; mean=12.60; α =.76
Job: Equipment / Environment		C13, C14, C15, C16	Range=1-24; stderr=0.09; mean=12.60; α =.53
Supervisors: Positive		C20, C21, C22, C24	Range=1-16; stderr=0.11; mean=8.45; α =.87
Supervisors: Negative		C25, C26	Range=1-8; stderr=0.06; mean=5.91; α =.69
Co-Workers: Support		C39--C45	Range=2-28; stderr=0.15; mean=11.12; α =.90
Co-Workers: Motivation		C36--C38	Range= 1-12;stderr= 0.06; mean= 7.75; α =.61
Supervisees: Responsibility		C30, C31	Range= 1-24;stderr= 0.30; mean= 18.31; α =.75
Supervisees: Who		C32a--C32d	Range= 2-24;stderr= 0.22; mean= 10.34; α =.77
Supervisees: Location		C32e--C32h	Range= 1-24;stderr= 0.30; mean= 18.31; α =.76
Civilian Co-Workers		C47--C50	Range= 1-16;stderr= 0.10; mean= 8.92; α =.66
Job Satisfaction		C17, C18	Range= 1-16;stderr= 0.06; mean= 4.46; α =.77
Discrimination Against Women		C27--C29	Range= 1-9;stderr= 0.05; mean= 5.26; α =.81

Construct	Definition from Literature	Definition from Item Factor Analyses	Statistics
Immediate Supervisor		C19	Male: 59% Female: 7% Male & Female: 34%
Who gets more assistance/support from co-workers?		C51	Men-much more: 6% Men-some more: 13% About Same: 44% Women-some more: 11% Women-much more: 13% only have male co-w: 8% only have fem co-w: 5%

Factor analysis of Job Stress Variables produces 5 factors:

Supervision/Discrimination Supervisors: Positive; Supervisor: Negative(reversed); Job Satisfaction; Discrimination Against Women(reversed)

Peers Co-Worker Support(reversed); Co-Worker Motivation; Civilians

Responsibility Job Demands; Job Control; Supervisees: Responsibility(reversed)

Working Conditions Equipment/Environment; Shift Work

Work Assignment Supervisees: Location; Supervisees: Who

Appendix H5. Stressful Life Events

Construct	Definition from Literature	Definition from Factor Analysis	Statistics
Stressful Life Events	D1a--D1w (sum)		Range= 0-23; stderr= 0.10; Mean= 4.46; α = 0.68
Financial Strain		D3, D4a--D4f (sum)	Range= 0-13; stderr=0.10; Mean= 2.28; α = 0.85

Factor analysis produced a fairly messy 10 factor solution:

Financial Stress	Financial situation got <i>worse</i> (D1m); Not enough money to cover food, clothing, housing, transportation, fun, child care D4a--D4f
Move	Moved: new home/apt (D1c); Major Job Change (D1n) Moved to different installation (D1o)
Marriage	Got Engaged (D1a); Got Married (D1b); Moved in with lover (D1d)
Marital Discord	Separation from partner (D1k); Partner had affair (D1p)
Child/System Problem	Child got in serious trouble (D1q); Received public assistance (D3)
Legal	Problem with friend/neighbor (D1s); Legal problem (D1t)
Change in household	Someone moved into HH (D1g); Someone moved out of HH (D1l)
Job Change	Promoted (D1v); Stationed away from spouse/kids (D1w)
Family Medical Crisis	Loved one dies (D1f); Illness in family (D1i)
Kids Happen	Have a baby (D1e); Adopt a child (D1f)

Appendix H6. Hassles

Construct	Definition from Literature	Definition from Factor Analysis	Statistics
Hassles	D5a--D5pp		Range= 0-39; stderr=0.15; mean= 12.91; α = 0.88

Appendix H7. Racial Discrimination

Construct	Definition from Literature	Statistics
Hurt/hindered by minority status	D26	No: 68% Yes: 32%
Degree hurt	D26/D27	Not hurt: 62% A little: 9% Somewhat: 18% A lot: 11%
Helped by minority status	D28	No: 87% Yes: 13%
Degree helped	D28/D29	Not hurt: 78% A little: 12% Somewhat: 8% A lot: 2%
Compare ability to advance with civilian life	D30	Better in Army/Reserves: 21% About the same: 53% Better in Civilian Life: 26%

Appendix H8. Sexual Harassment

Construct	Definition from Literature	Definition from Factor Analysis	Statistics
Crude/Offensive Behaviors	D11a--d, f		Range= 0-20; stderr=0.15; mean= 4.19; α = 0.88
Sexual Coercion	D11h, D11i		Range= 0-8; stderr=0.05; mean=0.47; α = 0.82
Unwanted Sexual Attention	D11g, D11j		Range= 0-8; stderr=0.06; mean= 1.07; α = 0.65
Total Sexual Harassment		D11a--D11j	Range= 0-44; stderr=0.26; mean= 6.68; α = 0.90
Treated differently because of your sex	D11e		Never: 5% 1 or 2 times: 19% Sometimes: 16% Often: 5% Very Often: 5%
Consider [D11] behaviors sexual harassment	D12		None harassment: 30% Some Harassment: 35% All Harassment: 10% N/A: 25%
Where Harassment took place	D14		Living Quarters only: 8% Other On-Post only: 24% Other Off-Post only: 44% Quarters+Other On-Post: 3% Quarters+Othr Off-Post: 3% Quarters+On+Off-Post: 10%
When did harassment take place	D15		No Harassment: 32% All during duty hours: 17% Most during duty hrs: 19% Some during duty hrs: 19% None during duty hrs: 13%

Construct	Definition from Literature	Definition from Factor Analysis	Statistics
Who harassed?	D16 (mark all that apply: don't sum to 100%)		Military:Higher Rank: 25% Military:Equal Rank: 30% Military:Lower Rank: 8% Military:Other: 20% Civilian:Supervisor: 2% Civilian: Co-Worker: 11% Civilian: Subord: 1% Other Unknown person: 14%
How upsetting was/were harassment incident(s)	D17		
Report any incidents?	D18		No: 89% Yes: 11%
Satisfaction with actions resulting from complaint	D20		Very Satisfied: 15% Somewhat Satisfied: 23% Not Very Satisfied: 26% Very Dissatisfied: 36%
Negative consequences of having reported or complained	D21/22		No Report: 91% None: 5.7% Minimal: 1.5% Moderate: 1.3% Serious: 0.3%
Given bad duty because you're a woman (past year)	D23		Never: 72% Rarely: 13% Sometimes: 9% Often: 3% Very Often: 2%
Seriousness of impact of gender discrimination	D24/25		No Discrimination: 71% No Serious Impact: 7% Somewhat Ser Impact: 12% Very Serious Impact: 6% Extreme Ser Impact: 4%

Factor analysis of total harassment score, consider incident harassment (D12), upset (D17),

report incident, any past-year-discrimination (D23), and impact of past-year-discrimination (D24/25) produced 2 factors:

Sexual Harassment (total harassment score, D12, D17 D18)
Perceived Discrimination (D23, D24/25)

Appendix H9. Social Support

Construct	Definition from Literature	Definition from Factor Analysis	Statistics
Duke Social Support Index	F1-F11		Range: 2-32; StdErr: 0.16; Mean: 26.35; α : 0.82
Perceived Social Support		F4-F11	Range: 3-32; StdErr: 0.13; Mean: 20.41; α : 0.85
Satisfaction with Social Support		F1 F2	Range: 2-6; StdErr: 0.01; Mean: 4.46; α : 0.50
Amount of Stress reducing activities	F12/F13		No stress reducer: 21% 0-3 hours: 32% 4-6 hours: 29% 7-10 hours: 11% 11 or more hours: 6%

Correlation between Duke Social Support Index and Amount of stress reducing activities: 0.23